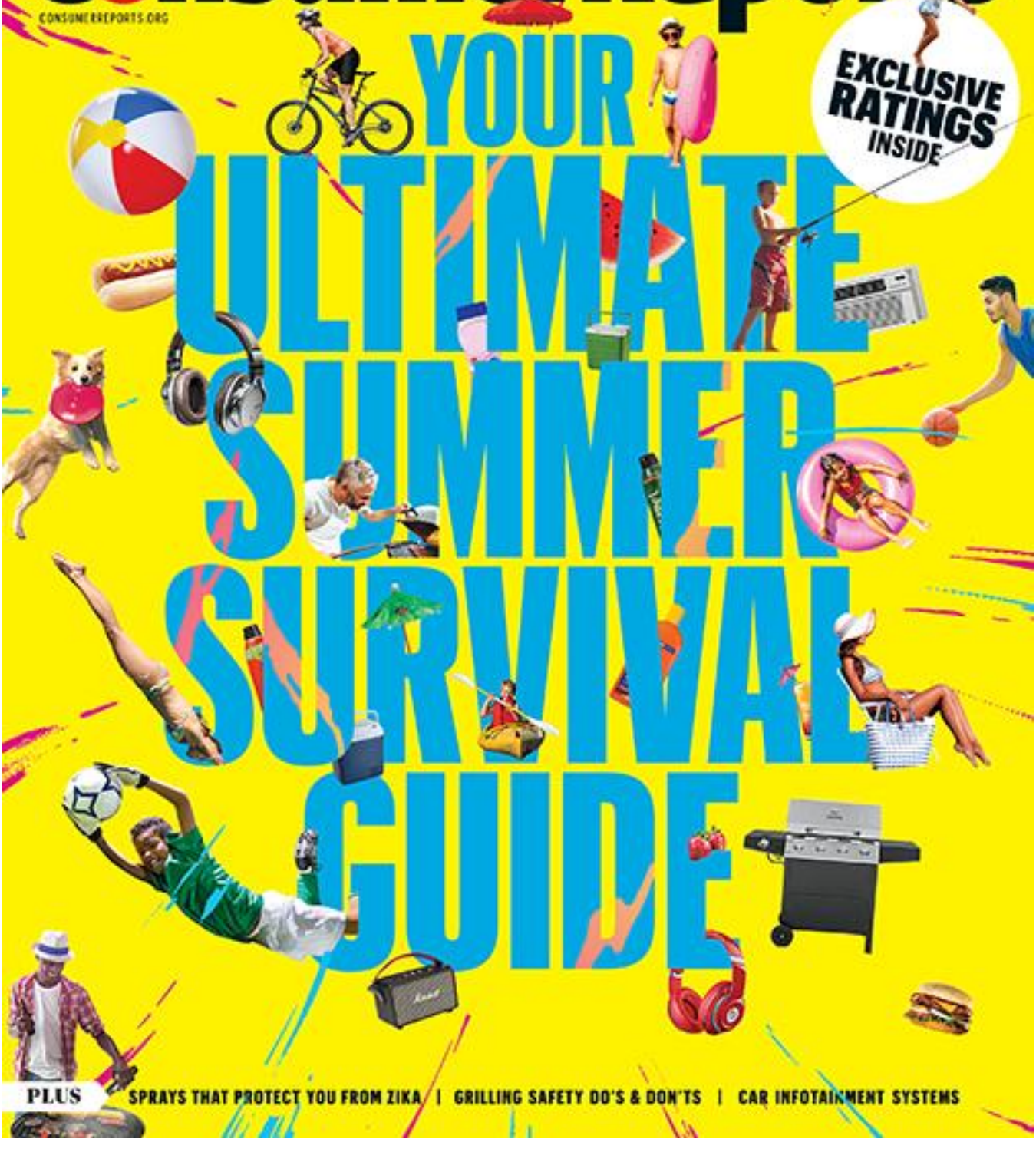
JUL 16

BEST & WORST SUNSCREENS | GRILLS | HEADPHONES | COOLERS | INSECT REPELLENTS | AIR CONDITIONERS

ConsumerReports®

CONSUMERREPORTS.ORG



YOUR ULTIMATE SUMMER SURVIVAL GUIDE

EXCLUSIVE RATINGS INSIDE

PLUS SPRAYS THAT PROTECT YOU FROM ZIKA | GRILLING SAFETY DO'S & DON'TS | CAR INFOTAINMENT SYSTEMS

ConsumerReports® **Build & Buy** Car Buying Service

In the Market for a New Car?

Don't overpay!

- Consumer Reports Ratings
- Negotiation-free savings
- Nationwide dealer network
- Incentives included

See your savings at ConsumerReports.org/carsavings

*Between 7/1/15 and 9/30/15, the average estimated savings off MSRP presented by TrueCar Certified Dealers to users of the Build & Buy Car Buying Service, based on users who configured virtual vehicles and who TrueCar identified as purchasing a new vehicle of the same make and model listed on the certificate from Certified Dealers as of 10/31/2015, was $2,954, including applicable vehicle specific manufacturer incentives. Your actual savings may vary based on multiple factors including the vehicle you select, region, dealer, and applicable vehicle specific manufacturer incentives which are subject to change. The Manufacturer's Suggested Retail Price ("MSRP") is determined by the manufacturer, and may not reflect the price at which vehicles are generally sold in the dealer's trade area as not all vehicles are sold at MSRP. Each dealer sets its own pricing. Your actual purchase price is negotiated between you and the dealer. Neither TrueCar nor Consumer Reports brokers, sells or leases motor vehicles. Service not available in Canada.

July 2016, Vol. 81 No. 7

YOUR ULTIMATE SUMMER SURVIVAL GUIDE

Our tests of the season's essentials will arm you with everything you need to know for a stay-cool, sunburn-free, no-bug-bite, best-burgers-ever kind of summer

P. 14

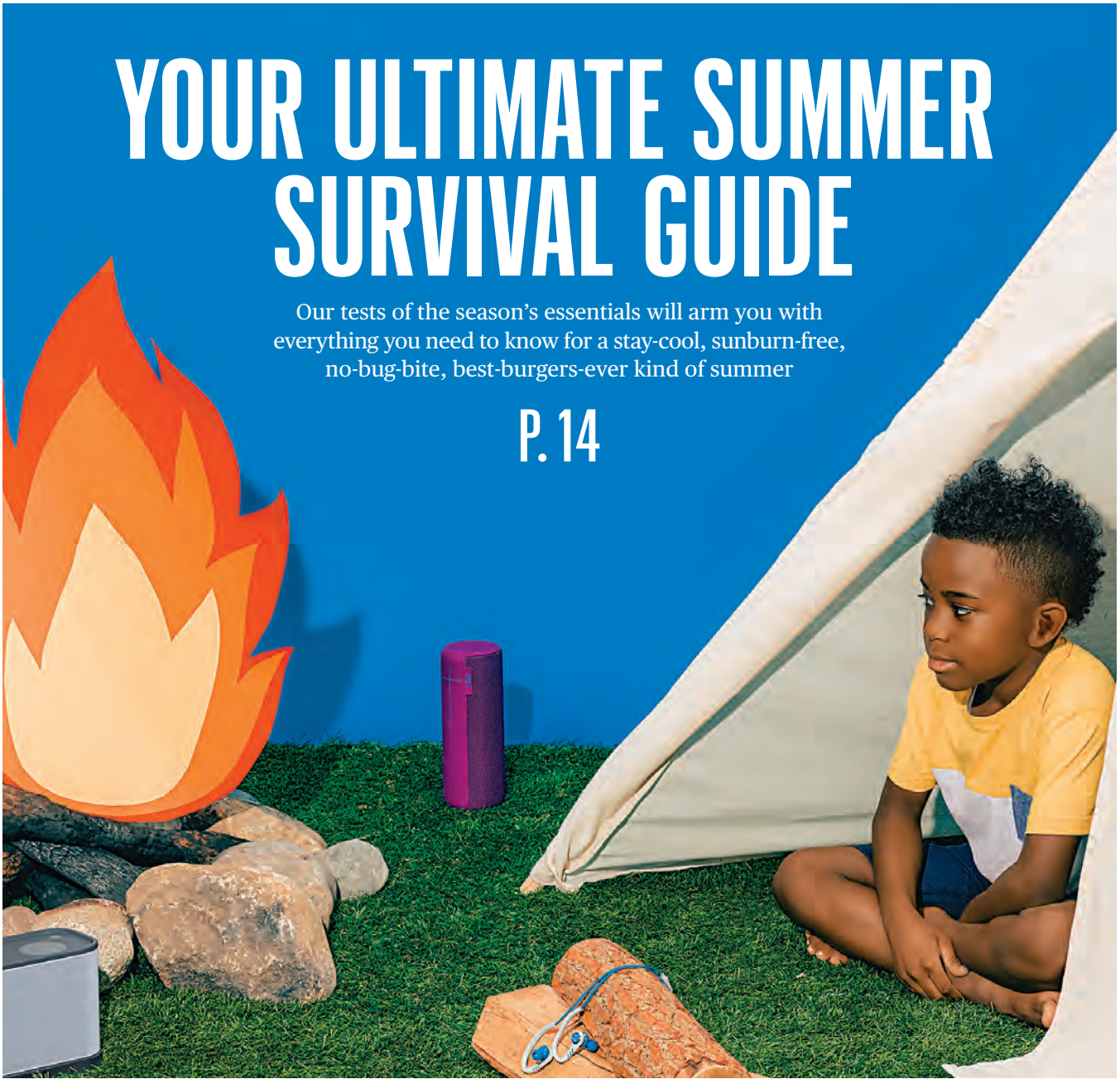


PHOTO: JAMIE CHUNG; PROP STYLING: MEGUMI EMOTO

The Coolest House on the Block
Chill out with the best window air conditioners and the most reliable central air systems.
RATINGS
P. 17

Your Burning Questions, Answered
Sunscreens you can count on to protect you and your family from the sun's damaging rays.
RATINGS
P. 20

Put Some Sizzle in Your Summer
Great grills, plus tools and food safety tips for your backyard barbecues.
RATINGS
P. 30

Insect Repellents in the Age of Zika
Our rigorous tests reveal which products really repel mosquitoes and ticks—and the diseases they carry.
RATINGS
P. 40

Don't Miss a Beat
You won't want to get the party started before you check out top-rated speakers and headphones.
RATINGS
P. 44

CONTENTS

July 2016, Vol. 81 No. 7

IN EVERY ISSUE

5 From the President: Here Comes the Sun
How our tests and expert insights set you up for a fun and safe summer.

5 About the Cover

6 Your Feedback
Readers' comments about our content, in email and social media.

7 Watch Our Reports Leap off the Page
Follow the simple instructions to download an app and access videos, behind-the-scenes peeks, and more.

8 Building a Better World, Together
Keeping financial planners honest, news about arsenic, and our president's new advisory role to the government on the digital economy.

66 Index A year's worth of products.

67 Selling It Goofs and gaffes.

INSIGHTS

9 Breaking Up the Band
How to make sure the strap on your fitness tracker lasts as long as you do.

10 Democracy in the Digital Age
What might happen if Americans were able to vote online.

13 Ask Our Expert
The right way to grill potatoes, why you should seek shade if you're taking certain meds, and how to secure your dog in the car.

P. 13

P. 58

ROAD REPORT

58 Get More Flash in Your Dash
Your car's infotainment system can help you enjoy the ride—or stop you in your tracks. The standouts and stinkers from our exclusive survey.

62 Worth the Splurge
The Audi Q7 tops our SUV tests. RATINGS

62 Tight as a Drum
Why we describe the Mercedes-Benz GLC300 as "an opulent cocoon." RATINGS

63 The Average Driving Machine
BMW's compact SUV, the X1, is larger and roomier but falls short of what people expect from a BMW. RATINGS

63 Fuel Sipper With an Improved Ride
For summer road trips, Toyota's new gas-sipping RAV4 Hybrid is raring to go. RATINGS

WE CELEBRATE A MILESTONE

52 A New Vision of True Health
A vision of healthcare 50 years into the future, from an innovative doctor on the front lines.

54 A Fearless Fight for a Safer World
Consumer Reports has pushed for daring, groundbreaking, and prescient health and drug reforms since 1936. Our mission to move the marketplace continues today.

ABOUT CONSUMER REPORTS We are the world's largest independent, nonprofit, consumer-product-testing organization, based in Yonkers, N.Y. We survey millions of consumers about their experiences with products and services. We pay for all of the products we rate. We don't accept paid advertising. We don't accept free test samples from manufacturers. We do not allow our name or content to be used for any promotional purposes.
HOW TO REACH US Write to us at Consumer Reports, 101 Truman Ave., Yonkers, NY 10703-1057, Attn: Customer Service.

TO SEND A LETTER TO THE EDITOR Go to ConsumerReports.org/lettertoeditor.
NEWS TIPS AND STORY IDEAS Go to ConsumerReports.org/tips.
E-MAIL SUBMISSIONS For Selling It send to SellingIt@cro.consumer.org or call 800-666-5261. See page 67 for more details.
SUBSCRIPTION INFORMATION Go to ConsumerReports.org/magazine or call 800-666-5261. See page 66 for more details. **RATINGS** Overall scores are based on a scale of 0 to 100. We rate products using these symbols: ●**Excellent** ◓**Very Good** ○**Good** ◒**Fair** ●**Poor**

ConsumerReports®

President and CEO
Marta L. Tellado

Senior Vice President, Brand & Strategy
Leonora Wiener

Editor in Chief Diane Salvatore
Executive Editor Kevin Doyle
Senior Editor Jody L. Rohlena

Design Director Matthew Lenning
Associate Design Director Mike Smith
Art Directors Tammy Morton Fernandez, Janice Hogan, Ewelina Mrowiec, Lisa Slater, Tracy Stora, Joseph Ulatowski
Photo Editors Emilie Harjes, Karen Shinbaum

Vice President, Publishing & Marketing Operations Brent Diamond
Vice President, Integrated Content Creation Liam McCormack
Vice President, Digital Jason Fox
Vice President & Chief Marketing Officer Kim Miller

Executive Director, Content Gwendolyn Bounds
Senior Director, Product Testing Mark Connelly
Director, Content Development Glenn Derene
Director, Special Projects Sandy Keenan
Director, Content Impact & Corporate Outreach Jen Shecter

Cars Mark Rechtin, Content Lead
Editors: Jeffrey Bartlett, Jonathan Linkov, Mike Monticello, Michelle Naranjo
Auto Test Center: Jake Fisher, Jennifer Stockburger, Directors; Product Testers: Mike Bloch, John Ibbotson, Chris Jones, Anita Lam, Emily A. Thomas, Tom Mutchler, Gene Petersen, Ryan Pszczolkowski, Mike Quincy, Gabe Shenhar, Shawn Sinclair, Joe Veselak, Seung Min "Mel" Yu

Electronics Jerry Beilinson, Content Lead
Editors: Patrick Austin, Michael Gikas, Christopher Raymond, Terry Sullivan, James Willcox
Product Testers: Maria Rerecich, Testing Lead; Kerry Allen, Elias Arias, Claudio Ciacci, Charles Davidman, Richard Fisco, Dean Gallea, Joseph Lazzaro, Richard Sulin, Maurice Wynn

Health & Food Ellen Kunes, Content Lead
Editors: Orly Avitzur, M.D.; Trisha Calvo; Lauren Cooper; Chris Hendel; Jeneen Interlandi; Joel Keehn; Marvin M. Lipman, M.D.; Andrea Rock; Diane Umansky
Product Testers: Maxine Siegel, Testing Lead; Amy Keating, Ellen Klosz

Health Ratings Doris Peter, Director

Best Buy Drugs Lisa Gill, Deputy; Editors: Teresa Carr, Ginger Skinner, Steve Mitchell

Consumer Safety and Sustainability Urvashi Rangan, Executive Director; Doris Sullivan, Henry Akinleye

Home & Appliance Editors: Dan DiClerico, Mary Farrell, Kimberly Janeway, Celia Kuperszmid Lehrman, Ed Perratore
Product Testers: John Galeotafiore, James Nanni, Testing Leads; Peter Anzalone, John Banta, Susan Booth, Tara Casaregola, Lawrence Ciufo, Enrique de Paz, Bernard Deitrick, Cindy Fisher, Emilio Gonzalez, Edward Kippel, Ginny Lui, John McAloon, Joan Muratore, Joseph Pacella, Christopher Regan, Peter Sawchuk, Pat Slaven, Frank Spinelli, David Trezza, Michael Visconti

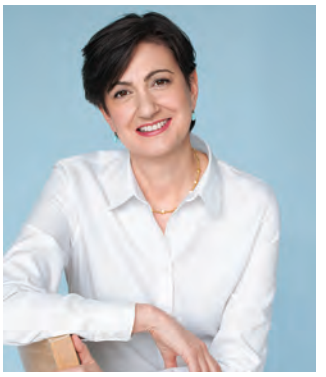
Money Margot Gilman, Content Lead
Editors: Jeffrey Blyskal, Chris Horymski, Nikhil Hutheesing, Tod Marks, Donna Rosato, Tobie Stanger, Mandy Walker

Content Systems & Operations Strategy Peter Meirs, Director
Content Operations David Fox, Director; William Breglio; Wayne Lizardi, Anthony Terzo
Production Eric W. Norlander; Terri Kazin, Aileen McCluskey
Imaging Francisco Collado, Mark Linder
Content Coordination Nancy Crowfoot; Diane Chesler
Copy Editing Noreen Browne, Alison France, Wendy Greenfield
Fact Checking Jane Healey, David Schipper; Kathleen Adams, Tracy Anderman, Sarah Goralski, Sharon Riley
Administration Decarris Bryant, Elizabeth Scotton

Consumer Engagement Testing Charu Ahuja, Director; Linda Greene, Adam Kaplan
Statistics Michael Saccucci, Director; Keith Newsom-Stewart, Martin Romm, Andrew Cohen
Survey Research Steven Witten, Director; Karen Jaffe, Simon Slater; Mei Fong, James David Gopoian, Kendra Johnson, Debra Kalensky, Martin Lachter, Olufemi Olu-Lafe, Adam Troy
Consumer Insight Ed Farrell, Director; Karen Hoffman; Chris Holmes, Robert Huerster, Dirk Klingner, Rachel Lynch, Andrew Vogel
Newsstand Marketing Patricia McSorley, Associate Director
Procurement Operations Steven Schiavone, Associate Director

PHOTO: MELANIE DUNEA

Here Comes the Sun



Marta L. Tellado, President and CEO
Follow me on Twitter
@MLTellado

IT'S THAT TIME of year again: Summer is almost upon us. And whether you'll be enjoying yours in the city or in the country, on the lake or by the beach, this is the season of spending time outdoors with family and friends. This month, Consumer Reports has you covered with everything you'll need to know to get the most out of your summer adventures–and to stay safe while you do.

Before you soak up the sun, look to Your Ultimate Summer Survival Guide for expert analysis on which sunscreens will best protect you from burns or other harmful skin damage. Our breakdown of insect repellents will equip you to make the smart choice about how to keep unwanted pests away, a particularly vital concern given the rise of mosquito-borne viruses. If you're in the mood for a summer barbecue, we have full Ratings of the top grills on the market–as well as crucial tips on how to avoid the potentially serious risks of undercooked meat. And when it's time to cool off indoors, our air conditioner reliability and energy-savings scores will empower you to get the most value and contentment out of your unit during the dog days of summer. Wherever you find yourself in the months ahead, you can count on Consumer Reports to have your back–offering data-driven guidance you can trust, so you can keep your mind on what matters: enjoying the season.

As Consumer Reports continues to celebrate 80 years of working with consumers to build a fairer, safer, healthier marketplace, we've dug into our archives to showcase highlights from our history. This month we look back at our long legacy of health coverage, from an examination of Alka-Seltzer advertising in our very first issue in 1936 to our award-winning series on the rise of superbugs last year. We hope you'll take the opportunity to check out all of our historic content in this issue and throughout our anniversary year. And as you peruse our past, we also hope that you'll look to the future by taking advantage of an exciting new technology we're exploring to bring even more of our content to life on your smartphone. Read more about that on page 7.

We share important advice about how to protect yourself and your family from the Zika virus.

ABOUT THE COVER

Our splashy summer cover this month was created by award-winning digital designer Chuck Anderson. Anderson has worked with many nonprofits such as Invisible Children and Charity: Water. He was named a Design Icon by Computer Arts magazine.

To watch our cover come to life, scan the cover in your hand with the Blippar app *(see page 7 for full intructions).*

WHAT YOU DON'T KNOW ABOUT YOUR DOCTOR COULD HURT YOU
Thousands of doctors across the U.S. are on medical probation for reasons including drug abuse, sexual misconduct, and making careless—sometimes deadly—mistakes. But they're still out there practicing. And good luck figuring out who they are.
BY RACHEL RASKIN PEACHMAN

Checking Up on Doctors

In response to our May 2016 cover story, "What You Don't Know About Your Doctor Could Hurt You," we heard from more than one hundred patients, doctors, and other healthcare professionals. State Sen. Jerry Hill, D-Calif., brought the magazine to the statehouse in support of legislation requiring physicians to inform patients when they're placed on probation, a proposal Consumer Reports helped initiate. And in an editorial, The San Francisco Chronicle cited "a devastating report by Consumer Reports."

THIS IS SO outrageous. How some of those doctors mentioned aren't in jail is beyond me. Thank you for bringing this to light. Hopefully, many people will begin to demand transparency in the medical field as well as learn to ask questions and demand answers. This information should be made available on hospitals, too.
–Marcia Broady, Putnam, IL

You must be kidding!? A GP can prescribe opiates and trade for sex and ONLY GET PROBATION? Not sure who is doing the most damage ... the offending Dr., the AMA, or the agency(s) responsible for violations!!
–Carolyn Carroll, via Facebook

I JUST RECEIVED the May issue of Consumer Reports yesterday and saw your superb 14-page article on physician malfeasance and the scandalous level of malperformance of many state boards of medical examiners. It was given the proper emphasis. I say this from the perspective of a retired professor of medicine.
–Karl Engelman, M.D., Hilton Head, SC

IN RESPONSE TO YOUR most recent issue portraying doctors as a group of criminals and perverts and addicts: The huge majority of us don't live glamorous lives. We struggle to balance family and work, and are saddled with debt from school that takes us half of our career to pay back. We work long hours and are often disrespected and abused by patients who are angry at the system. You have thrown fuel on the fire. We are fighting to keep this health system from failing you and the rest of this country. Shame on you.
–Dawne Lowden, M.D., Wichita, KS

I am a surgeon from Tennessee. I serve on peer-review committees and am chief of my department in my hospital. When a physician has an egregious event we vet it completely, and the consequences can be quite dire. Far more often there is a gray zone. Medicine used to be a career pursued by the best and brightest because it was a profession of esteem and we were compensated well. No longer. I tell my young partners it is not if you get sued, but when you get sued. I am all for more transparency in my field, but there also needs to be comprehensive tort reform.
–James McDowell, M.D., via Facebook

I AM APPALLED that the state medical boards are so lenient toward punishment for crimes that would put those who are not doctors in prison or in court, penniless. If I had a DUI as a commercial pilot, I would have my license immediately pulled and most likely find it very hard to fly for any airline or company.
–Brad Purvis, Niceville, FL

IN MY HUMBLE OPINION, this is everything to move the dial to safer healthcare. For decades, the industry has instructed patients and families to do their homework. For even longer, patients have been blamed for their preventable injuries and death–"Oh well, he was sick, so he would have died anyway." We all have been deeply impacted by such victim-blaming and lack of learning from mistakes. This is the first meaningful piece of news in patient safety I have seen in a long time. This is the foundation to build a strong, safer healthcare experience. I have shared this on FB and Twitter. I have emailed it to my state legislators and congressmen with a signature that reads: In hope.
–Mary Ellen Mannix, Philadelphia

THANK YOU! You honestly made a huge, meaningful effect (in a good way)! Some of the things from your article even made me cry, because I too have been a victim! Your article helped me realize that I am not alone and that there is hope that I might be able to stand up for my situation.
–Letisha Breight, via Facebook

I AM ON STAFF at the Federation of State Boards of Physical Therapy. Obviously, your points apply to all licensed health professionals. While physical therapists don't have the same opportunities for physical harm as physicians, they do have lots of other opportunities, particularly because PT is a very touching profession. We believe our members need to hear this important message. We also hope that we can start having dialogue with Consumer Reports and others around how we can help become part of the solution.
–Mark Lane, vice president, Federation of State Boards of Physical Therapy, Alexandria, VA

The stories of impaired and incompetent physicians causing harm to patients only speak to one aspect of the problem. Where are the stories of physicians who have had their lives and careers ruined by false accusations? Or for seeking appropriate help for clinical or personal problems? Of course we need to identify and properly deal with doctors who are harming patients. But the system to accomplish that must also be designed so that innocent, competent doctors are not harmed and physicians who seek help are not punished.
–Beth Haynes, M.D., via Facebook

FORGET CONFUSING websites. The best way to find a good doctor? Ask a nurse.
–Barbara Gorga, Waldwick, NJ

I HAVE BEEN a board-certified family physician for the past 35 years. Your article on physician behavior was an honest look at a difficult subject. Not only is behavior history hard to track down, so is outcomes data. When sending a patient to a surgeon, my main source of competency is limited to the local knowledge gained by being in the same community, i.e., "I have sent a lot of people to this physician and they usually do well."
–Lawrence Ulmer, D.O., Portage, MI

CLARIFICATION In "What You Don't Know About Your Doctor Could Hurt You" (May 2016), we referred to Scott Eisenkop, M.D., as a surgical oncologist. More specifically, he is a gynecologic oncologist certified by the American Board of Obstetrics and Gynecology.

Past, Present, and Future

During this 80th anniversary year, we're celebrating milestones in the form of Consumer Reports covers, starting with our first (May 1936), as well as a timeline of food-related milestones.

THANK YOU so much for the delightful and informative feature, "Cover Worthy" (May 2016). It was a fascinating march through the history of Consumer Reports magazine and a glimpse into consumer advocacy over the 20th century. Nice job!
–Ken Derow, Swarthmore, PA

IF ANYONE EVER questioned how helpful Consumer Reports was, this should end all doubt. You do a fantastic job of keeping the public informed on innumerable topics. I hope anyone reading this issue will be inspired to give to the Consumer Reports foundation. Your staff is worth its weight in gold.
–Thomas Kidd, Mableton, GA

Our Food, Ourselves

In the May issue, we debuted the first article in a series of provocative opinion essays by thought leaders, "A Safer Food Future, Now," by Eric Schlosser, author of "Fast Food Nation." Go to ***ConsumerReports.org/saferfood*** *to see more comments and to add your own.*

HAVING WORKED FOR family farmers for nearly 20 years now, [I feel] our food is safer than it ever has been. Our environment is also much better off with many of the practices put in place by farmers the last 50 years or so, and animal welfare is a top priority of our farmers. I have mixed feelings about the corporate food world, but I see firsthand how food companies will give consumers what they ask for, even if a new product or practice contradicts science, ethics, or common sense.
–Jennifer Dickey Elwell, Shepherdsville, KY

AMERICA NEEDS TO realize that "the good life" isn't all about money. In fact, by pointing to the antibiotic abuses in our food industry, Eric Schlosser shows us that greed can actually snuff out life altogether. While this is nothing new, it is disgusting that men trample fellow men for the sake of personal gain.
–Elizabeth Zuranski, Ariel, PA

MY HUSBAND AND I both come from families that have farmed in Kansas since our state was first settled, and we both cut our teeth on the principles of being good stewards. The author wants kind, compassionate care for animals, which farmers nationwide are already providing. Day after day after day, we feed our animals perfectly balanced, nutritionist-recommended food. Our veterinarian spends more time making sure our animals are happy and healthy than our own family doctor spends on our children. We sweat in the heat, get drenched in the rain, freeze in the winter, and get blown in the Kansas wind to make sure they have the most comfortable life possible. This is what kind, compassionate care looks like.
–Valerie Visser, Riley, KS

Remember, your money as a consumer speaks louder than protests, letters, or lobbying. Buy local, non-GMO, and/or organic; grow your own; be an informed consumer.
–Iuna June, via Facebook

IT ALWAYS AMAZES me how many people are unaware of what is happening around them in regards to our current food system, even those who work within it. Eric Schlosser's article is right on point. Unfortunately, corruption and greed have been at the forefront for decades, and most often it starts at the top from those whose duty it is to serve and protect in the first place. Disregard for sustainability, the environment–not to mention the health and welfare of animals–has brought us to this point. Thank you, Consumer Reports, for once again bringing this crucial issue to the surface. Awareness is the first step in changing things.
–Barbara Clark, Wilmington, DE

I AM SIMPLY ASKING that the products offered to consumers are labeled accordingly. So, Mr. and Mrs. Farmer, feel free to grow your GMO. I will not be buying a product if it contains genetically modified ingredients, or even if I'm unsure if it does.
–Peggy Kasallis, Franklin Park, IL

WRITE Go to **ConsumerReports.org/lettertoeditor** to share your comments for publication.

WATCH OUR STORIES LEAP OFF THE PAGE

In this issue, you'll have the chance to see some of our articles in another dimension with the Blippar app. Blippar brings bonus Consumer Reports features to your smartphone or tablet, allowing you to shop for the products we recommend and view behind-the-scenes videos and other highlights that will enhance your experience with the magazine.

1. Download the free Blippar app from the Apple Store or Google Play. *(Need help? Go to ConsumerReports.org/blippar)*

2. Scan, or "blipp," any page with this icon.

3. Enjoy bonus content.

YOU CAN "BLIPP"

the cover to see it come to life.

page 17 to watch us make and test a DIY air conditioner.

page 40 to find the insect repellents that protect against Zika.

page 44 to access our buying guide for wireless speakers.

page 62 to watch videos of this month's cars on our test track.

PROTECTING YOUR SAVINGS

A PERSON INVESTING for retirement could hold on to tens of thousands of dollars more thanks to a new rule from the Department of Labor. It requires all financial advisers who provide investment guidance on retirement accounts to act in their clients' best interest.

You might think that was always the case—but remarkably, that's not true. Some types of advisers, called fiduciaries, do indeed have to put a client's financial interests above their own. The products that certified financial planners, registered investment advisers, and certain other professionals can recommend must be not only a good fit for clients but also cost-effective among comparable choices.

But other advisers—such as stockbrokers who work on commission—have merely been required to recommend "suitable" investments. That means they could suggest options that suit a client's needs and goals but may have high commissions or fees.

The Department of Labor says that when advisers pick those types of investment products for their clients, they reduce their clients' returns (and pad their own pockets) by an average of 1 percent per year. That might not sound like much, but it adds up to about $17 billion annually.

Under the new rule, which fully goes into effect by January 2018, all financial advisers, whether fee-only or commission-based, will have to adhere to the same "fiduciary rule." Those who don't can be held accountable through breach-of-contact lawsuits and other safeguards.

Consumer Reports has been working behind the scenes to help make this rule a reality. During meetings with key stakeholders at the Department of Labor, in Congress, and at the White House, we've urged officials to resist industry pressure to weaken the new standard. We believe these changes are long overdue and will help remove a conflict of interest that has until now potentially jeopardized financially secure retirements.

SERVING THE NATION

THE COMMERCE DEPARTMENT has appointed Consumer Reports' president and CEO, Marta L. Tellado, to serve on its first advisory board on the digital economy. The board will advise the department on its new Digital Economy Agenda, which will cover such issues as promoting a free and open Internet, trust online, and technology innovation.

Tellado is the only consumer representative on the board, joining executives from AT&T, Microsoft, YouTube, and others. In the announcement, Commerce Secretary Penny Pritzker said: "I am thrilled that such a knowledgeable and diverse group of thought leaders has volunteered to serve. As we develop an agenda to help the digital economy grow and thrive, it is critical that we engage with those on the front lines of the digital revolution."

SAFEGUARDING AMERICA'S FOOD SUPPLY

CONSUMER REPORTS has long been concerned about arsenic in the U.S. food supply. That heavy metal is a potent carcinogen and a danger to developing fetuses, and it can set children up for health problems in adulthood.

We first noted variable but concerning levels of inorganic arsenic in 2012, in a report about apple and grape juice. Later we shared our findings about arsenic in rice and rice products such as infant cereal.

After repeatedly calling on the Food and Drug Administration to act, it responded in 2013 by setting a threshold for juice. That's a good step, but it's not protective enough. In guidelines for manufacturers that were released in April, the FDA is now proposing capping the amount of inorganic arsenic allowed in infant rice cereal.

"We're pleased that the FDA has taken this step, but we remain concerned that so many other rice-based products remain without any standards at all," says Urvashi Rangan, Ph.D., executive director of our Food Safety and Sustainability Center. The FDA should act swiftly to set levels for rice as well as rice beverages and cereals.

In the meantime, vary your diet and eat grains lower in arsenic, such as barley, farro, and millet. As for babies, they should eat no more than one serving of infant rice cereal per day, on average, and consume cereals made from other grains. To learn more, go to ConsumerReports.org and search for "arsenic."

ILLUSTRATION BY JOHN RITTER

INSIGHTS

NOTABLE NEWS & SMART SOLUTIONS

THE STRAP TRAP
As some consumers have discovered, the bands on fitness trackers aren't as hardy as they'd like.

Breaking Up the Band

What can you do to keep the strap on your fitness tracker from falling apart?

LIKE MANY health-minded consumers, Emile Chang Jr. bought a fitness tracker to get more active. But he was shocked to learn that the device—a Fitbit Charge—gave out long before he did. After three months of daily use, says the Long Island software analyst, 25, the strap began to peel away from the device's screen. Equally troubling, Chang had purchased the same model for his father. "His started to peel after five months," Chang says.

If you search online, you'll find dozens of complaints about wristbands made by Apple, Jawbone, Misfit, and others discoloring, splitting, and even disintegrating in less than six months. In 2014 a wave of band-related rashes forced Fitbit to issue a recall on its Force trackers.

Is it crazy to think a manufacturer can design a comfortable, long-lasting strap? The materials experts we contacted would not venture a reply without more info on the bands in question, but David Parks, Ph.D., of the Massachusetts Institute of Technology conceded that exposure to sweat, hand creams, and other household products can lead to chemical degradation in rubber.

Sam Bowen, vice president of product engineering at Fitbit, says the company tests to make sure the bands stand up to daily use. That includes exposing the bands to oils, skin-care products, and cleaning agents.

To prolong a strap's life, Jawbone advises users to "avoid excessive stretching and twisting." Fitbit's care tips are more specific: They urge users to wash the band with water and a little rubbing alcohol after a heavy sweat. To remove buildup from sunscreens and insect repellents, try a soap-free cleanser such as Aquanil or Cetaphil. (Soaps can irritate skin when trapped beneath the device.) If you ask us, that sounds like a lot of pampering for a workout tool. *–Patrick Austin*

PROP STYLING: MEGUMI EMOTO

PHOTOGRAPH BY JAMIE CHUNG

Democracy in the Digital Age

We now use the Internet to shop for cars, file taxes, and everything else in-between. But are we ready to vote with our smartphones? *By Bill Hewitt*

AS DIANE HARRIS set out to vote in the presidential primary in Arizona on March 22, she had no idea of the grueling odyssey she was in for. She and a friend ended up driving to five polling sites. At each one they encountered long lines and no parking available within a half-mile of the door. Harris, 62, a retired paralegal who was using a cane that day, and her friend Helen, who was in a wheelchair, spent almost 3 hours traversing the Phoenix area until they arrived at a polling site 20 miles from home, where the wait was only 20 minutes. "It was all so frustrating," Harris recalls.

More Participation

Considering the importance of elections in the U.S., the country sure does make voting a challenge. National elections are held on a Tuesday in November, a workday for most people. In 11 states and Washington, D.C., you can register to vote on Election Day. (Maryland allows same-day voter registration only for early voting.) Other states have registration deadlines of eight to 30 days before an election.

Some states have expanded voting by mail, online registration, absentee voting, and similar practices. But others have become more restrictive: 33 states request or require voters to show identification at the polls, and 17 of those states request or require a photo ID. And voters in places like Maricopa County in Arizona, where budget cutbacks have significantly reduced the number of polling spots, can find crowded conditions more reminiscent of a Depression-era breadline than a polling site in the Internet Age.

54%

of survey respondents said voting should be just as convenient as other transactions conducted via the Internet.

Why, then, when everything from buying airline tickets to filing federal income taxes is routinely done online, is voting for most Americans still such a manual, show-up-in-person, paper-ballot-based process?

We're in the midst of a dramatic political year, one that's raising questions about elections in the U.S., including how parties assign delegates and the rules of primaries.

Leaders are also questioning the very act of how we vote. At the SXSW Interactive Festival in Austin, Texas, in March, President Barack Obama questioned why voting technology hadn't advanced in step with Internet-based commerce.

"We're the only advanced democracy in the world that makes it harder for people to vote," he said, adding, "how do we redesign our systems so that we don't have 50 percent or 55 percent voter participation on presidential elections, and during off-year congressional elections, you've got 39 or 40 percent voting."

Both Democrats and Republicans have experimented with online voting. In the 2000 presidential primary, the Arizona Democratic Party offered online voting to registered Democrats. And in the Utah GOP's presidential caucus this year, registered Republicans were able to vote online.

Consumer Reports is a nonpartisan organization that doesn't endorse any candidate or party, but it does believe the voting process should be simple, safe, and secure. But are American voters ready for online voting? Are they even interested? To find out, the Consumer Reports National Research Center surveyed 3,649 voting-age U.S. citizens in March.

The results showed that a considerable number of respondents were receptive to the idea. Thirty-nine percent of likely voters said they would choose the option to vote by computer, tablet, or smartphone in the 2016 election rather than vote by traditional methods. The Internet option was especially popular with people under 30.

Diane Harris doesn't fall into that demographic, but after her ordeal, she says she'd like to vote online, too. "I hope [it] becomes the norm," she says. "We do our banking online, pay our bills online. It just seems like we should be able to."

But is Internet voting really a pragmatic solution to low

PHOTO: EDUARDO MUNOZ ALVAREZ/GETTY IMAGES

turnout and other electoral concerns? Or is it on the order of a nuclear-powered can opener–a technological step forward but perhaps more trouble than it's worth? Our survey found that there were significant concerns among respondents about the privacy and security of an online voting system.

And even though the survey found that many people would choose to vote online, it also suggests that the option might increase the number of likely voters by only 7 percentage points. That may seem like a small bump, but the popular vote in several modern presidential contests has been close. For example, in Bush vs. Kerry in 2004 and Obama vs. Romney in 2012, the margins were 2.47 and 3.86 percent, respectively.

A Toe in the Online Waters

Some forms of Internet voting already exist in the U.S. All 50 states and D.C. send ballots to overseas voters electronically, and 32 states and D.C. allow electronic ballot returns via fax, email, or the Web from some voters, although those voters may have to waive their right to a secret ballot. In 2012 Alaska was the first state to establish an electronic voting system for all absentee voters, whether overseas or not. Alabama recently unveiled a system that allows residents who are overseas at election time to vote on a special website.

Alabama's secretary of state, John Merrill, a Republican, says the program ensures that those in the armed forces will have their voices heard without having to rely on the postal service to return their ballots on time.

"I'm enthusiastic about what we're doing about our military men and women," Merrill says. "We need to take care of them and make sure their vote is counted."

Everyone Counts, the company that created the software used in Alabama, is one of a number of firms marketing Internet-based voting systems.

(continued on page 12)

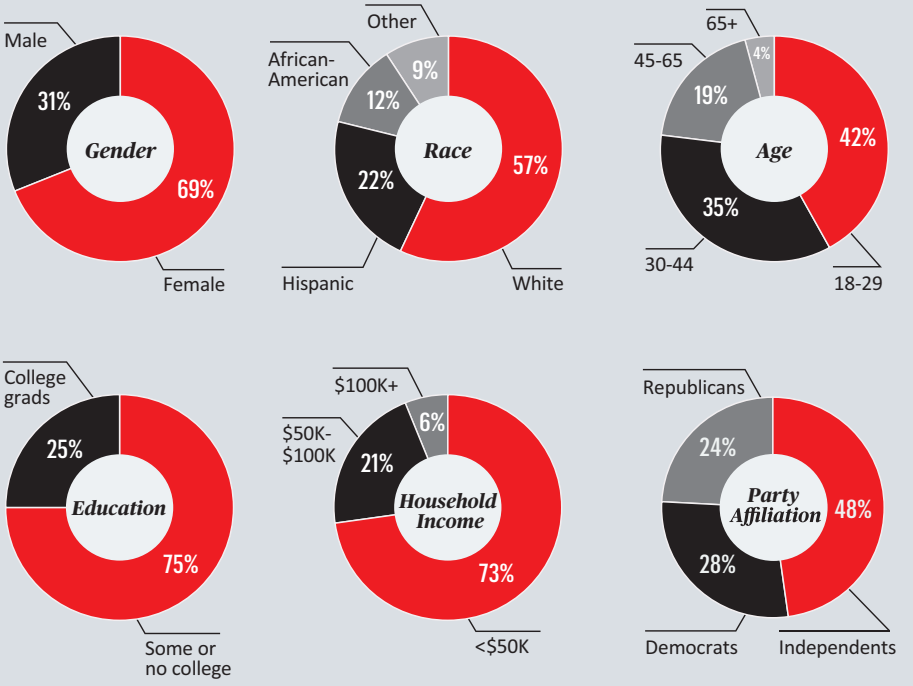
WOULD INTERNET VOTING MAKE YOU MORE LIKELY TO VOTE?

We commissioned a survey to find out how the option to vote online would affect the 2016 presidential election if the technology were widely available. We asked 3,649 U.S. citizens of voting age whether they would be more likely to vote if they could cast their ballot via the Internet from wherever they choose.

The survey results suggest that Internet voting would increase the number of likely voters by 7 percentage points. That may not seem like a lot, but eight presidential elections since 1916 have had popular-vote margins under 5 percent. Our survey didn't collect enough responses at a state level to determine how these new voters might affect the electoral map.

Our survey also found that women, younger adults, Hispanics, and Independents had a higher representation within the group of new potential voters than in the overall voting-age population.

Who Are Those Additional Voters?



INFOGRAPHIC BY THOMAS POROSTOCKY

Lori Steele, the company's founder and CEO, says demand is about to take off. "All the people saying why can't I vote on my tablet or mobile phone actually can," she says. "And governments are tired of not being able to give it to them."

Steele argues that in addition to making voting easier, her company's system offers multiple advantages over traditional methods. For one thing, she says, "security is exponentially increased over any other kind of voting because each ballot, as well as the electronic ballot box, has military-grade encryption."

She also claims that Web voting is more accurate—no more hanging chads or marks on a paper ballot that may be difficult to interpret. Web systems can also save money and can be upgraded or reconfigured as laws change, Steele says.

Online voting is already further along elsewhere in the world; about a dozen governments have explored the technology. The boldest adopter is the Baltic nation of Estonia, which began offering voters the option of casting their ballots from a website in 2005. With a population of about 1 million, Estonia provides a case study of how such a system might work. Voters use their national identity smart card and PIN with a card reader when they log in to the website to vote. Internet voting is quite popular, with almost 25 percent of eligible voters going digital.

In addition to letting its citizens vote in their pajamas, Estonia has changed other fundamental mechanics of elections. For example, people voting online can change their vote multiple times, right up to when the polls close.

Hacking the Vote

Whatever the political system, efforts to introduce Internet voting face the same overriding issue: how to make sure ballots aren't subject to manipulation or fraud by hackers or compromised by a system failure.

Pamela Smith, president of Verified Voting, a nonpartisan and nonprofit advocacy group in Carlsbad, Calif., that works for improvements in the management of elections, argues that the Web isn't necessarily the safest voting booth.

"Let's face it; the number of cyberattacks is increasing, not decreasing," Smith says, citing the Pentagon and Sony hacks, to name just two. "Part of it is the Internet was not really designed with fundamental security in mind. It was designed as an open communications platform."

84%

of respondents think that elections could be hacked if American citizens were allowed to vote online.

39%

of the people who expressed concern about vote hacking said they would prefer to vote online anyway.

Smith says that online banks and stores are plagued by enough fraud to give anyone pause about adopting Internet voting. (Worldwide, cybercrime costs about $445 billion annually, according to the Center for Strategic & International Studies.) "They're willing to do it because they're still making enough money," she says. "It's just a cost of doing business."

Moreover, with online banking and commerce, if something goes awry either through malfeasance or malfunction, it can generally be corrected, given that there's an identifiable account that can be scrutinized. By contrast, voting depends on the anonymity of the ballot. No outside party should ever be able to check to see whether your vote was properly recorded.

"When it comes to elections, the question is how many votes you could afford to lose to fraud or malfunction and still call it a legitimate election," Smith says. "You need something a lot closer to a zero tolerance policy."

Steele contends that's what her company's software provides. "We've been busy building a good solution," she says. "You can't be in this decade and pretend that technology hasn't advanced."

In addition to the progression of encryption, Steele says, there are logistics and processes to deter any hacker bent on, say, stealing a national election in the U.S. Because there are about 8,200 local election jurisdictions in the U.S., "it's not one election, it's 8,200 elections," she says. "You can't take down a country."

But Aviel Rubin, a professor of computer science at Johns Hopkins University, says hackers could try to steal a presidential election by manipulating the tally in a few key districts. And the cyberattacks wouldn't need to be that sophisticated. Rubin says all the attackers would need to do is identify counties in a battleground state where the candidates they oppose might have strong support. Using a technique known as a distributed denial of service, they could flood servers with Internet requests to impede access to them.

"What I would do is drop their Internet service by maybe 80 percent, so that some small fraction of voters would give up in frustration," Rubin says. "Some people are just not going to bother."

And some computer-science experts say that experience has shown that voting online is a dangerous practice. A case in point: In 2010 the District of Columbia planned to introduce online balloting for overseas absentee voters. In the run-up to the election, officials invited people to try to hack the system by what's known as "penetration testing." The results were disquieting. It took a team from the University of Michigan only 48 hours to seize almost complete control of the election server and successfully change every vote and reveal the identity and vote of almost every voter. And as it was rummaging around the server, the team observed attack traffic from such places as Iran and China.

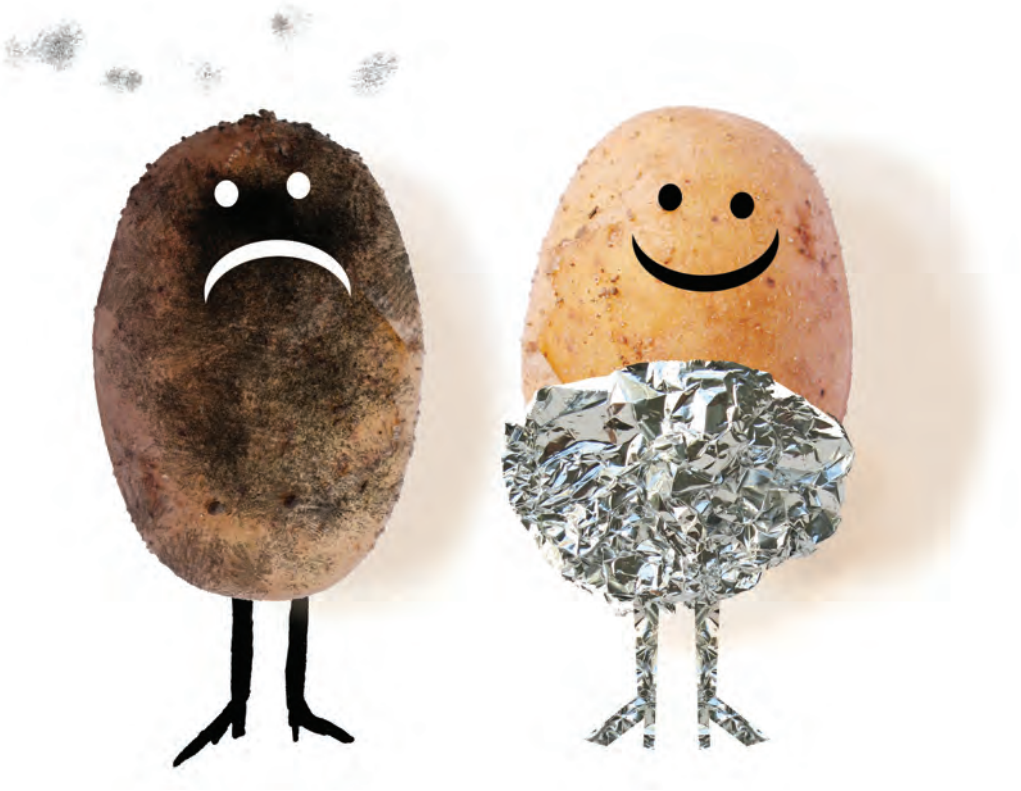
Can any of those vulnerabilities be readily fixed? Not in the foreseeable future, according to Rubin and other computer experts. "I'd love to be able to vote on my phone, but I don't see how it could be done securely," he says. "It would mean completely changing systems on our devices and how our networks are configured."

If anything, Rubin adds, the potential vulnerabilities of the Internet are looming larger than ever before. "I think it's much more likely that in the future we'll have to stop online banking," he says, "than it is that we'll have online voting."

Steele dismisses the naysayers. "We know the bad guys work hard all the time to make it harder to stay secure," she says. "That's why we work hard all the time."

Merrill seconds that sentiment, insisting that any qualms about security are exaggerated. "We have some people who are opposed to anything until it's 100 percent secure," he says. "If that were the case, we wouldn't have a lot of the inventions we have today."

Surprisingly, though, Merrill has no desire to see online voting expanded to the entire electorate. To him, the real danger isn't security; it's that it might make the process so easy it might be taken for granted. "I'm not supportive of electronic voting for just anybody, just because somebody's too sorry to get up and cast a ballot," he says. "I think you should have to show a little initiative."



ASK OUR EXPERTS

I know you shouldn't char meat on a grill to avoid a cancer risk. But I just heard a warning about potatoes, too. What gives?

"Cooking potatoes to a deep brown creates a compound called acrylamide, which, at high levels, has been shown to cause cancer in animal studies," says Amy Keating, one of our registered dietitians. The World Health Organization considers acrylamide to be a "probable human carcinogen," although it and other health agencies say that more studies are needed to determine what levels might be dangerous. Acrylamide can also be found in bread, cereal, coffee (because the beans are roasted), and other foods. To play it safe, be careful how you cook potatoes. It's the starch inside that reacts to the heat. Baking, grilling, and roasting can cause acrylamide to form, but frying produces the most. So french fries and potato chips are among the worst culprits, Keating says.

An easy way to prepare potatoes at a cookout is to wrap them in aluminum foil before grilling. That will steam them instead, and steaming doesn't produce acrylamide. Neither does boiling. If you're slicing potatoes, rinse the slices in water before cooking by any method, which will also reduce acrylamide formation. And always aim for a golden or light-brown color—no darker—according to the Food and Drug Administration.

LEARN

Send your questions to **ConsumerReports.org/askourexperts** and watch this space for the answers.

I'm taking antibiotics, and the package says I should stay out of the sun. How seriously should I take that warning?

Certain medications can make you more sensitive to heat and sunlight, so be cautious in the hot summer months, says our chief medical adviser, Marvin M. Lipman, M.D. For example, taking the antibiotic doxycycline and going out in the sun could increase your risk of developing painful or itchy rashes that lead to blistering. Other antibiotics can cause you to sunburn much more quickly. Some over-the-counter medications can also increase sun sensitivity, including ibuprofen (Advil, Motrin IB, and generic). And diuretics like hydrochlorothiazide combined with sun exposure can cause permanent dark patches on your skin. If you're taking a drug that causes sun sensitivity, stay out of direct sunlight, especially from 10 a.m. to 4 p.m., when the sun is strongest. If you must venture out, be sure to cover up and use sunscreen.

My dog loves to ride in the car. What's the best way to keep her safe?

It's important to keep your dog secured just like the rest of your passengers, according to the nonprofit Center for Pet Safety. Jennifer Stockburger, Consumer Reports' child-safety expert, says "it's as much about your safety as hers." That's because if the vehicle stops short, your unrestrained pet could turn into a dangerous projectile.

Pet products are an unregulated $60 billion industry. Some companies label their products as "tested" or "crash-tested," but there are no government or industry standards for pet-safety items, says the center's founder, Lindsey A. Wolko. So the group did its own independent tests of crates, harnesses, and pet carriers. (They were funded by Subaru to cover the costs of the crash tests.) In the end, only a handful of products earned the center's crash-test certification. For carriers, they were the PetEgo Jet Set Forma Frame Carrier with an Isofix-Latch Connection, $252, and the Sleepypod Mobile Pet Bed with PPRS Handilock, $170 to $190; for crates, Gunner Kennels G1 Intermediate, $500, with 8' Tie-Down Straps, $75; and for harnesses, the Sleepypod Clickit Sport, $70 to $90, and Sleepypod Clickit Utility, $90 to $100. (Prices vary according to size.) To learn more, go to centerforpetsafety.org.

ILLUSTRATION BY SERGE BLOCH

YOUR ULTIMATE SUMMER SURVIVAL GUIDE

SUMMERTIME ... and the living is easy. Or so says the song. Sure, you can have a blast, but along the way there are stinging sunburns and itchy bug bites, smartphones that go for a swim without you, and patio cookouts with barbecue grills that sputter and stop. Our summer guide will arm you with all of the intel you need to avoid mishaps and keep the focus on fun. We recommend coolers that will keep your drinks chilled on the hottest days, towels that easily shake free of sand, beach anchors that will stand up to a stiff breeze, sunscreens to protect you from dangerous rays, and insect repellents that really do keep bugs at bay–now more important than ever because of the Zika virus. And to make sure your summer soirées are a success, we rate grills at different prices that are built to last and wireless speakers guaranteed to make your next outdoor party really rock. Now that's something to sing about.

PROP STYLING: MEGUMI EMOTO

PHOTOGRAPH BY JAMIE CHUNG

Scan this page or any page in this section using the Blippar app to watch videos and shop for products *(see page 7 for details)*.

Yeti Roadie 20 cooler *$250*; Sandusa sand-resistant beach towel *$50*; USA Sand Anchor beach umbrella *$16*.
See product details on page 16.

WHAT'S THE COOLEST COOLER OF THEM ALL?

Last September Rebecca Cathey, a recent retiree from Oklahoma, was camped in her truck near Steamboat Springs, Colo., when she was woken up by the sounds of huffing, banging, and snorting outside. "Oh, my gosh," she thought. "Something's trying to get in the cooler!" That something turned out to be a bear. The cooler was a $350 **Yeti Tundra 45,** billed as bear-proof, and the animal gave up and left, presumably hungry. Score one for roto-molded polyethylene.

We tested a smaller, similarly constructed cooler, the $250 **Yeti Roadie 20,** along with three cheaper—much cheaper—options from Coleman, Rubbermaid, and a company called Lifoam that makes disposable Styrofoam models. Our take: For a day at the beach, we would choose the **Coleman 18-Quart Party Stacker** or the 20-quart **Rubbermaid Cooler/Ice Chest.** Both earned a Very Good in our tests for keeping ice frozen for a full day in 100° F conditions. Each costs about $20 and weighs 4.4 pounds empty. The Yeti keeps ice frozen almost twice as long, so it earned an Excellent score—but it costs 12 times as much and weighs 15.4 pounds.

How about the $8 **Lifoam 22 Quart Cooler?** It holds more than the other models, weighs a feathery 0.6 pounds, and insulates about as well as the Coleman and the Rubbermaid. Essentially disposable, it may last only a couple of days, so it scored only Fair.

—Jerry Beilinson

◓ Coleman 18-Quart Party Stacker

◓ Rubbermaid Cooler/ Ice Chest

BEACH UMBRELLAS THAT WON'T BLOW AWAY

If you've ever chased a tumbling beach umbrella down a stretch of hot sand on a windy day as other sunbathers ducked and cringed, you know how important it is to make sure it's well-secured. But don't rely on brute force. For extra insurance, use an anchor to hold your umbrella in place. We recently tested seven models, all sold at mass retailers and online. Four have a screw-in auger design, one is buried in the sand, and two use the weight of sandbags to secure the umbrella pole.

We set them up in damp sand, following the manufacturer's instructions. Then we used a digital gauge to measure the amount of force needed to either pull them out of the sand or lift them off the ground. All were much better than just sticking a standard pole into the sand, but some held better than others.

BEST OVERALL

● The **Dig-Git DG-00030 Umbrella Anchor/Shovel,** *$40,* is essentially a shovel with a hollow handle that holds your beach umbrella. You use it to dig a hole, then to anchor the pole in place after you fill the hole with sand. Of all the models we tested, the Dig-Git required the most force to extract it from the sand.

BEST SANDBAG MODEL

◓ The **beachBUB Ultra Umbrella Base,** *$30,* is a vinyl base that you fill with up to 120 pounds of sand, creating a weighted anchor. It held well. If you think you might have trouble twisting an anchor into the sand, this could be your best choice.

ALSO TESTED

◓ The **USA Sand Anchor Plastic Beach Umbrella Sand Anchor,** *$16,* has large auger blades to keep an umbrella firmly in place.
◓ The **Tommy Bahama Deluxe 7-Foot Beach Umbrella,** *$65,* comes with a sturdy built-in anchor.
○ The **Rio Brands XCB202CB-01 Sand Anchor,** *$10,* has a shallow auger that didn't hold as well as wider augers.
○ The **USA Sand Anchor Metal Beach Umbrella Sand Anchor,** *$18,* didn't grip the sand as well as the plastic version. It may be better for hard, rocky beaches.
○ The **Noblo Umbrella Buddy,** *$18,* is a nylon bag that you fill with up to 30 pounds of sand. It works like the beachBUB but didn't hold as well.

—Devin Pratt

CLAIM CHECK

GO AHEAD, KICK SOME SAND ON OUR BEACH TOWEL

A soggy, sandy towel is at the top of the list of beach annoyances, along with cloudy skies and bad hair. So when we heard of a towel designed to resist sand and water, we wanted to try it. The **Sandusa** is a nylon-backed cotton towel that comes in four bright, striped patterns and costs *$50* (sandusa.net).

The nylon side, which you place on the sand, is "where the magic happens," the sales pitch says. To test the claim, we created a makeshift beach in our labs, with a sand-filled box and a wet sandbag as a stand-in for a sodden swimmer. We found that the Sandusa worked as promised. When we put it on wet sand, moisture didn't seep through to the cotton side you lie on. With our wet "swimmer" on it, the cotton side got wet but the sand underneath stayed dry and didn't stick to the nylon backing. Of course, on a windy day sand may still be blown onto the top of the towel. You can also use the towel to protect car seats from wet bottoms.

Our chief complaints: It's pricey! And at 63 inches long and 33 inches wide, the Sandusa is shorter and narrower than a standard beach towel. Also, it might create an unbalanced wash load, and drying in a dryer may damage the nylon.

—Celia Kuperszmid Lehrman

THE COOLEST HOUSE ON THE BLOCK

Avoid an air conditioning breakdown as summer heats up with this keep-cool guide

BY MARY H.J. FARRELL

LG LW6016R *$175*

This small window air conditioner is 6,000 Btu/hr. and can cool a room of 100 to 300 square feet. It got excellent scores for cooling and for restarting after a power outage. It's pretty quiet on low but a bit noisier on high, something to consider if you'll put it in a bedroom. It comes with a remote.
RATING 74

PROP STYLING: MEGUMI EMOTO

PHOTOGRAPH BY JAMIE CHUNG

Scan this page using the Blippar app for an air conditioner buying guide and to see us test a DIY version *(see page 7 for details).*

SUMMER'S STEAMIEST DAYS can keep even the most intrepid among us shuttered indoors seeking the sublime relief of air conditioning. And with temperatures predicted to be above average for much of the country, you'll want to make sure your A/C is in good working order.

Once upon a time, window air conditioners were the norm, but today about 90 percent of newly built homes come with central air. If you already have it, bear in mind that systems tend to last no more than 15 years, and if yours is at least 10 years old, it probably no longer meets today's energy efficiency standards. By upgrading to a new system, you could cut your cooling costs by 20 to 30 percent.

The appeal of central air is pretty obvious; the seasonal ritual of installing and uninstalling window units every summer and fall can be tiresome and difficult. But switching to central air can be disruptive and expensive. To assess whether it's a good investment, consider two factors: the length of the cooling season where you live and whether most nearby homes have central air. If you live far south or west in the country, home buyers probably expect it, so if you don't have central air, it could lower your home's value. In the Northeast, it isn't as critical because the cooling season is shorter, and many older homes don't have it.

The messiest part of installing central air in an older home without a forced-air heating system is creating the duct system. Another option is a split ductless system. It cools more uniformly, like central air, but instead of using ductwork, the systems have multiple indoor units (called air handlers) mounted high on the wall, as well as an outside condenser. The mechanicals between the two parts are carried by thin tubing through a small hole in the wall behind each unit. You'll need one air handler for each room, and you can turn them on all at once or just cool the rooms you're using. Professional installation is recommended.

LEARN

Go to **ConsumerReports.org/air-conditioners** to learn how to size an air conditioner.

THE ABCs OF CENTRAL A/C

The cost of installing central air depends on whether you have ductwork. Installing a system in an average home with ducts may cost up to $5,000–but twice that if you need ducts, too.

Wherever you live, if you are putting in a central air system, you'll want to pay attention to energy efficiency. For the first time, the federal standards differ by region, with central air conditioning systems in the hotter South and Southwest required to meet stricter standards than those installed in the cooler North. A system's yellow Energy Guide label now includes a map of the U.S. that shows where the equipment can be installed. More efficient setups might cost more, but you'll save on utility costs over the life of the system. But to get that savings you'll need to replace the exterior unit, or compressor, and the interior unit, or air handler, and make sure your ductwork is insulated.

EXPERT TIP If your furnace is more than 15 years old, consider replacing both the furnace and air conditioner because a new A/C system won't work as efficiently if it's connected to the blower motor of an old furnace.

Assuming you've decided to take the plunge, you'll want to choose a dependable central air conditioning system. To estimate the reliability of major brands, 16,247 of our readers told us about their experience with their system.

There are two types: conventional, which are more common in areas with wide temperature swings, and heat pump, which are usually used in areas with more moderate cooling and heating needs. Heat-pump systems, used for cooling and heating, move warm air from your cool house outside when it's hot out and do the opposite when it's cold.

In addition to the most and least reliable brands shown in the chart below, we learned which parts of the systems are most likely to break. By the fifth year of ownership, the most repair-prone parts on both types of systems are the evaporator coils and the controls. Owners of heat-pump systems also reported damaged compressors.

Rheem was the most expensive conventional system to repair; Ruud heat-pump repairs were the most costly.

RELIABILITY SURVEY

COOLING SYSTEMS BUILT TO LAST

In our survey, 6,761 owners of conventional central air conditioning systems and 9,486 owners of systems with heat pumps told us about the brands they purchased new between 2008 and 2015.

PERCENT LIKELY TO BREAK BY 5TH YEAR

HEAT PUMPS		*CONVENTIONAL*	
York	50%	Amana	30%
Goodman	48%	Goodman	29%
Rheem	44%	York	28%
Amana	43%	Rheem	27%
Ruud	43%	Carrier	24%
Lennox	38%	Bryant	23%
Carrier	38%	Trane	21%
Trane	37%	Lennox	21%
Bryant	34%	American Standard	20%
American Standard	31%		

Results are based on Consumer Reports' 2015 Fall Product Reliability Survey. Differences of fewer than 7 points aren't meaningful for conventional systems; differences of fewer than 8 points aren't meaningful for heat pumps. Our statistical model estimates failure rates (repairs or serious breakages) for 5-year-old systems that receive annual professional maintenance but are not covered by a service contract. We adjust for the average number of months of use over a 12-month period. The median number of months that conventional systems are used is five; for heat-pump systems it's seven.

Scan this page using the Blippar app for an air conditioner buying guide and to see us test a DIY version *(see page 7 for details).*

HIGH-IQ AIR CONDITIONING

Some of today's air conditioning systems are smarter than they used to be. To get the most out of your central A/C for the least money, pair it with a programmable thermostat. That allows you to cool your house when you're home but let the temperature rise when you're not. More and more of those energy-saving thermostats work with Wi-Fi, enabling you to use a smartphone app to adjust the settings from wherever you are—say, on your commute home. (In our thermostat tests, models with remote access from Honeywell, American Standard, and Trane made our list of top picks.) And though window air conditioners usually don't offer the whole-house control of a central system, manufacturers have been working to improve their connectivity. Some window air conditioners from Friedrich and Frigidaire can be programmed to work together by using an add-on Wi-Fi kit, and LG has introduced a smart portable air conditioner. If you already have a home router or smart-home hub, you may be able to add more functionality to newer room units as long as they have a remote control, and most do.

RATINGS: Window Units That Keep It Cool

Expect to spend up to $350 for a large window air conditioner; smaller ones cost less. As a rule of thumb, a window A/C needs a minimum of 20 Btu/hr. for each square foot of living space. We group-tested models by size.

☑ CR Best Buy ☑ Recommended

● Excellent ◓ Very Good ○ Good ◒ Fair ● Poor

Rec.	Rank	BRAND & MODEL	PRICE	SCORE	BTU/HR.	EER	MAX WINDOW WIDTH (IN.)	TEST RESULTS: Comfort	Brownout	Indoor Noise, High	Indoor Noise, Low	Ease of Use	Airflow Facing Unit
A. WINDOW A/Cs, 5,000 TO 6,500 BTU/HR. (COOLS 100 TO 300 SQUARE FEET)													
☑	1	**GE** AEM05LV [1]	$170	**82**	5,200	12.4	38	●	●	◓	◓	○	L
☑	2	**LG** LW6016R [1]	$175	**74**	6,000	11.5	35	●	●	○	◓	○	L
☑	3	**Frigidaire** FFRA0511R1	$125	**71**	5,000	11.1	37	●	●	○	○	◒	R/L
	4	**Frigidaire** FFRE0533Q1	$175	**70**	5,000	11.2	37	◓	●	◓	◓	○	L
	5	**Friedrich** Chill CP05G10	$250	**70**	5,450	10.7	36	◓	●	○	◓	◓	L
	6	**Frigidaire** FFRA0611Q1	$220	**69**	6,000	9.7	38	●	●	○	◓	◒	L
	7	**LG** LW6015ER	$210	**67**	6,000	11.5	34	○	●	○	◓	○	L
	8	**Haier** HWF05XCL	$140	**65**	5,000	9.7	35	●	●	○	◓	◒	R
	9	**Kenmore** 86050	$130	**63**	5,000	9.7	37	◓	●	◓	◓	◒	L
	10	**Haier** HWR06XCR HWR06XCR-L, HWR06XCR-T	$160	**63**	6,000	11.2	37	◓	●	○	○	○	R
B. WINDOW A/Cs, 7,000 TO 8,500 BTU/HR. (COOLS 250 TO 400 SQUARE FEET)													
☑	1	**GE** AEM08LT	$260	**77**	8,500	11.6	38	●	●	○	◓	○	L
☑	2	**LG** LW8014ER LW8015ER	$240	**77**	8,000	11.3	36	●	●	○	◓	◓	R
☑	3	**GE** AEW08LV AEZ08LV	$250	**74**	8,050	11.3	39	●	●	◒	○	○	L
	4	**Haier** ESA408N	$250	**70**	8,000	11.3	37	◓	●	◒	○	○	R
	5	**Haier** ESAQ408P	$370	**68**	8,000	11.3	40	◓	●	○	◓	◓	R/L
	6	**LG** LW8016ER [1]	$240	**67**	8,000	12.1	36	◓	●	◒	◒	○	R/L
	7	**Frigidaire** FFRE0833Q1	$240	**67**	8,000	11.3	37	◓	◓	○	◓	○	L
C. WINDOW A/Cs, 9,800 TO 12,500 BTU/HR. (COOLS 350 TO 650 SQUARE FEET)													
☑	1	**LG** LW1216ER [1] [2]	$350	**82**	12,000	12.1	41	●	●	○	◓	○	R
☑	2	**LG** LW1214ER [2] LW1215ER	$350	**78**	12,000	11.3	39	●	●	◓	◓	◓	R
☑	3	**Haier** HWE12XCR HWE12XCR-L	$310	**74**	12,000	11.3	39	●	●	◒	○	○	R
	4	**Frigidaire** FFRE1033Q1	$320	**64**	10,000	11.3	38	○	●	○	◓	○	R/L
D. PORTABLE AIR CONDITIONERS, 9,000 TO 15,500 BTU/HR.													
	1	**Friedrich** ZoneAire P12B	$600	**55**	11,600	NA	44	○	●	○	○	○	NA
	2	**LG** LP1414GXR	$500	**52**	14,000	NA	50	○	●	◒	○	◓	NA
	3	**Haier** HPN12XCM	$400	**52**	12,000	NA	47	○	●	○	○	◓	NA
	4	**Whynter** ARC-14SH	$500	**52**	14,000	NA	48	○	●	○	○	○	NA
	5	**Whynter** ARC-12SDH	$470	**51**	12,000	NA	48	○	●	○	○	○	NA

[1] Preretail model; we'll check-test retail model when it's available. [2] Has a slide-out chassis, which eases installation.

How we test. Air conditioners have gotten more energy-efficient since we began testing them in 1953. That's why this year we gave our testing chamber a high-tech makeover. Using a sliding wall, we can make the room larger or smaller to mimic the room sizes in an average house. After installing the unit in a double-hung window, we crank the heat up to 90° F, then measure how long it takes the air conditioner to cool the room down 10° F. The best do it in less than 15 minutes.

ILLUSTRATION BY MICHAEL BRANDON MYERS

PROP STYLING: MEGUMI EMOTO

Scan any page in this section using the Blippar app to watch videos and shop for products *(see page 7 for details)*.

PHOTOGRAPH BY JAMIE CHUNG

YOUR BURNING QUESTIONS, ANSWERED

Our scientific sunscreen testing exposes startling truths about product claims and effectiveness

OUR SUNSCREENS MAY NOT be protecting us as well as we think. In part, we have ourselves to blame—we often use too little, don't rub it in properly, or don't reapply enough or at all.

But even if you do everything right, the odds are good that your sunscreen may not deliver the protection it promises on the label. This year we tested and rated 65 lotions, sprays, and sticks with SPF claims of 30 or higher—30 being the minimum level recommended by the American Academy of Dermatology. But 28 of them—a full 43 percent—failed to meet the SPF claim on the label. Three of them fell far short, with an SPF of less than 15. That's not enough protection, and it could leave you vulnerable to sunburn and possible long-term skin damage, such as wrinkles or skin cancer.

Those results aren't a fluke; we've observed that pattern in our testing over the past four years. Of all the sunscreens we've tested over that stretch of time, fully half came in below the SPF number printed on the label, and a third registered below an SPF 30. (See "The Sorry State of Sunscreens," on page 27.)

Fortunately, this year's tests did reveal some real standouts: 17 hard-working sunscreens that won't leave you feeling greasy or sticky. With the guidance in "Crowd Pleasers," on page 25, and our Ratings, on page 28, you should have all of the information you need to be safe and comfortable in the sun this summer. To make sure you use your chosen product correctly, we have answers to your most common questions.

43%

of sunscreens in our tests failed to meet the SPF claim on their labels.

Q What does SPF stand for, exactly?

SPF LITERALLY MEANS sun protection factor. It's a measure of how well a sunscreen shields your skin against ultraviolet B rays (UVB), the chief cause of sunburn. Usually, the number is explained as the amount of time it takes an individual's skin to burn when it's covered in sunscreen compared with when it's not. For example, an SPF 30 would theoretically allow you to stay in the sun 30 times longer than you could without protection. That means if you typically burn in 15 minutes, wearing an SPF 30 would extend that time to 7½ hours.

Here's the catch, though: The level of SPF protection is calculated assuming you've applied the right amount of sunscreen. For the average-sized person, that's an ounce (about 2 tablespoons, enough to fill a shot glass or a blob the size of a golf ball) to adequately cover your face and body. Most people apply about half that amount. Also, sweating and swimming decrease the amount of sunscreen on the skin over time.

For the best protection, apply sunscreen 15 to 30 minutes before going outdoors so that it has time to fully absorb into your skin. Then—regardless of the SPF number on the bottle—reapply it every 2 hours, or immediately after you swim or perspire heavily. "I see patients daily that got burned because they didn't reapply," says Mona Gohara, M.D., associate clinical professor of dermatology at Yale School of Medicine. Don't rely on a tinge of burn on your skin as a sign you should reapply, either. Sunburn often takes several hours after sun exposure to fully develop, so you could be burning even if your skin doesn't look red right away.

Q Is higher better when it comes to SPF?

"IT'S NOT TRUE that sunscreens with higher SPFs block double or triple the rays as those with lower ones. They really only provide slightly more protection," Gohara warns. The breakdown: SPF 30 blocks 97 percent of UVB rays, SPF 50 blocks 98 percent, and SPF 100 blocks 99 percent. Not realizing that may lead people to think that if they use a higher SPF, they don't need to reapply or practice other sun-savvy behaviors, such as seeking the shade and covering up.

For example, in a 2014 nationally representative survey of 1,000 adults from the Consumer Reports National Research Center, 40 percent of people said they wait 3 hours or longer before reapplying when they are wearing a sunscreen with a higher SPF than they usually do, and 31 percent never reapply. That is especially problematic when, as we mentioned, people tend not to apply enough sunscreen in the first place. In previous tests we've found that if you use half of the recommended amount of sunscreen, you'll get half the protection—an SPF 30 becomes an SPF 15, for instance.

That illustrates the advantage of using

a higher-SPF sunscreen: Even if a product doesn't deliver its claimed SPF, you'll have a better chance of getting a minimum level of coverage. In our tests this year, of the 36 sunscreens labeled SPF 40 or higher, 26 met their claim or tested above an SPF 30.

There are no guarantees, though. Of the 28 sunscreens that did not meet their SPF claim in our tests, some missed the mark dramatically, even some labeled with a high SPF. For example, Banana Boat Kids Tear-Free, Sting-Free SPF 50 lotion and CVS Kids Sun Lotion SPF 50 both tested at an SPF 8. We shared our test results with Banana Boat and CVS and asked for a comment. Edgewell Personal Care, the makers of Banana Boat, said: "The lot of Banana Boat Kids SPF 50 lotion tested by Consumer Reports met the rigorous specifications in our manufacturing and testing process, including the level of active ingredients present required to achieve the formula's SPF value." CVS said, "We commissioned an extensive retesting of our product by the supplier and an independent third party, using industry standard and FDA-approved methodology. The results of this retesting met all product specifications, including the product's SPF 50 rating."

47%

of lifetime UV exposure, and the damage that comes with it, is received by age 40.

Q Is broad-spectrum a meaningful phrase or just marketing?

IT'S VERY MEANINGFUL—and we recommended using a broad-spectrum product. But perhaps not for the reason you think. According to a 2016 Consumer Reports nationally representative survey of 1,000 sunscreen users, 70 percent knew to look for a broad-spectrum product, but one-third incorrectly thought the term meant that a sunscreen protects all day without reapplying. What broad-spectrum really means is that in addition to warding off sunburn-causing UVB rays—which are more prevalent in the summer and between the hours of 10 a.m. and 4 p.m.—a sunscreen guards against UVA rays. Those rays penetrate into the deeper layers of skin than UVB, accelerating age-related skin damage and largely contributing to the risk of melanoma (the deadliest form of skin cancer). Protection against UVA is critical because those rays are constantly present during the day, no matter the season or weather. They also pass through clouds and glass.

Similar to the way you can pass a test with either an A or a D grade, some sunscreens do a much better job of defending against UVA than others. But there's no labeling system that indicates the strength of a sunscreen's UVA-blocking ability the way an SPF number can help you measure the level of UVB protection. And a sunscreen can be labeled broad-spectrum if it just passes the test the FDA requires manufacturers to use. For our Ratings, we use a test that is similar to the one used in Europe, where the passing grade for UVA is higher, which allows us to measure the degree of UVA protection. The majority of this year's products received at least Very Good UVA scores, but 20 percent scored Good or lower.

Q Won't getting a tan actually protect my skin?

A TAN PROVIDES the equivalent of up to an SPF 4, but any darkening is just a sign that your skin is defending itself against solar assault and attempting to prevent further damage. "A burn and a tan are kind of the same response. It just depends on how much of the pigment melanin you have in your skin," Gohara says. "Either way you've received an injury that can lead to cell mutations that trigger skin cancer." Nor are people of color immune to skin damage from the sun's rays. People of all ethnicities can get sunburn and skin cancer. "There is no circumstance under which dark-skinned people shouldn't be wearing sunscreen when exposed to the sun," Gohara adds.

Q If I've never used sunscreen my whole life, why should I start now? Isn't the damage already done?

HARDLY. FOR YEARS, it was believed that we got the majority of our lifetime dose of UVA and UVB rays before the age of 18. But now experts know that it's cumulative over your lifetime. By age 40, you've received just 47 percent of your lifetime sun exposure, and any corresponding damage along with it. By age 59, you've racked up 74 percent, leaving the final 26 percent for after you turn 60. The upshot: It's never too late to start protecting your skin.

Q What exactly are 'natural' sunscreens, and do they work?

"NATURAL" IS A CLAIM you see on sunscreens, but it's hard to know what it means because there are no standards for the term. It is often used to refer to mineral sunscreens, those that contain only titanium dioxide, zinc oxide, or both as active ingredients. Those minerals work by deflecting the sun's UV rays. The other type of sunscreen is chemical, which absorbs the sun's rays. Those products contain active ingredients such as avobenzone, ecamsule, homosalate, octisalate, octocrylene, octyl methoxycinnamate, octyl salicylate, and oxybenzone.

Mineral sunscreens aren't really natural: Titanium dioxide and zinc oxide may have originally come out of the earth, but by the time they're formulated into sunscreens, they've been processed and refined.

Almost half of the sunscreen users in our latest survey look for "natural" on a sunscreen label. But mineral sunscreens have consistently performed less effectively in our testing than their chemical cousins. In fact, not a single one made our list of recommended sunscreens this

year (or in years past), in part because only four of 13 met their promised SPF. None received higher than an overall Good Rating. All of the sunscreens that came in below an SPF of 15 in our tests were mineral sunscreens. If you can't find one of our recommended sunscreens, we suggest picking a chemical sunscreen with an SPF of 40 or higher, because the data from four years of our testing indicate that you have a better shot at getting at least an SPF 30.

One reason people like mineral sunscreens is that they are less irritating to skin; 42 percent of sunscreen users in our latest survey look for products for sensitive skin. "Chemical sunscreens can be irritating, so for people with eczema, rosacea, or other conditions that make skin more sensitive, mineral sunscreens are better options," according to Gohara. If you want a sunscreen without chemicals, consider Cotz Plus SPF 58, which was the top-scoring "natural" sunscreen in our tests—delivering an SPF 38 and Very Good UVA protection—or California Baby Super Sensitive SPF 30+, which met its claim and received a Good Rating for UVA and UVB. Another option is to try a chemical sunscreen that doesn't contain oxybenzone—which can cause negative skin reactions in some people. The oxybenzone-free lotion that rated highest in our tests is Ocean Potion Protect & Nourish SPF 30.

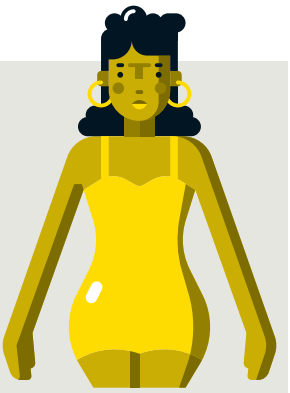
Q *Aren't the chemicals in sunscreen toxic?*

DESPITE CONCERNS about the safety of many active ingredients used in sunscreens, both chemical and mineral, it's clear that the risk of getting skin cancer as a result of not using sunscreen trumps those concerns.

Some chemical UV filters, such as octinoxate and oxybenzone, have been found to cause hormonal changes in animals; however, short-term research in people did not show any adverse effect. And one large animal study found that retinyl palmitate, one of a group of chemical compounds related to vitamin A called retinoids, may become carcinogenic when exposed to light. But that hasn't been studied in people. Taking pills that contain retinoids for skin conditions such as acne has been linked to birth defects, so pregnant women may want to avoid sunscreens with retinyl palmitate.

You may have heard that sunscreen actually causes skin cancer, but that belief springs from a misunderstanding of the facts. There are studies that show that sunscreen helps prevent skin cancer, including melanoma. Experts speculate that sunscreen use—and misuse—may give some people a false sense of security; people think that no matter how casually they slather the stuff on, they will be protected and therefore they stay out in the sun longer—often without reapplying. Remember, no sunscreen blocks 100 percent of UV rays, and sun damage is cumulative. In two European studies, people who used SPF 30 sunscreen sunbathed up to 25 percent longer than those using SPF 10. And a number of studies have shown a correlation between the use of sunscreen and increased incidence of sunburn. (Fast fact: On average, your risk for melanoma doubles if you've had more than five sunburns.) For instance, a Danish study reported that 66 percent of sunburned people had used sunscreen to prolong time spent in the sun.

The take-home message? Don't rely solely on sunscreen to guard your skin. Even the best sunscreens should be considered just one part of a comprehensive sun-protection regimen. And don't think that reapplying sunscreen meticulously allows you to stay in the sun longer than a sunscreen's approximate maximum protection time. After you've exceeded that time, your best option is to cover up, wear a hat, and seek the shade.



HEY, YOU FORGOT A SPOT!

When you're slathering on sunscreen, be sure to pay special attention to these often-missed areas:

SCALP
Apply a lightweight sunscreen along your part to prevent sunscreen-coated hair. Better yet: Wear a hat.

LIPS
One study found that 70 percent of beachgoers didn't shield their lips.

EARS
Even if you're wearing a hat, be sure to rub sunscreen on your ears, especially the tops.

NECK
The back of your neck gets loads of sun exposure. In addition to sunscreen, a wide-brimmed hat will help shield it.

BACK
It's tough to cover your back if you apply sunscreen yourself. But it's a common location for basal cell carcinoma and melanoma.

LEGS
They're the most common site for melanoma in women. It's easy to overlook the backs of your knees.

FEET
You'll regret it if the tops of your feet get burned—especially when you put your shoes back on.

Q *Is it better to use a lotion or a spray?*

THE BEST SUNSCREEN is the one you're most likely to use, and we found outstanding performers in both lotions and sprays. There are a few caveats with

ILLUSTRATIONS BY MICHAEL BRANDON MYERS

sprays, though. Our tests found that if applied properly, you can cover your skin adequately with a spray in one pass, but proper application isn't always easy, especially when it's windy. "Oftentimes you end up protecting the air more than your skin," Gohara says. That's why we recommend spraying, then repeating, just to be safe. Don't spray directly on your face—something our latest survey shows 26 percent of people who use sprays do—because you could get it in your eyes or inhale it. Instead, spray the sunscreen into your hand and rub it onto your face. Use sprays on kids only as a last resort—they are more likely to inhale the ingredients, which could cause lung irritation—or spray it into your hands and rub it onto their skin. Last, even if a spray is labeled "no-rub," you'll want to smooth it into your skin to increase its protection.

Q *Do you get what you pay for when it comes to sunscreen?*

THERE ISN'T A consistent correlation between price and quality. The top-scoring lotion, La Roche-Posay Anthelios 60 Melt-In Sunscreen Milk, wins for sun protection but has a major downside—it costs $36 for just 5 ounces, or $7.20 an ounce. Second place went to Pure Sun Defense SPF 50, which costs one-tenth as much: 79 cents per ounce, or $6.30 for an 8-ounce tube, making it a CR Best Buy. If you don't mind the kid-focused packaging (cartoon characters on the tubes), it's perfectly suitable for adults as well as children. As for sprays, one of the least expensive also got the highest rating, Trader Joe's Spray SPF 50+, which costs $1 an ounce, or $6 for a 6-ounce can.

Q *A lot of sunscreens say 'no nanoparticles.' What does that mean?*

ORIGINALLY, MINERAL SUNSCREENS left a white film on skin—think of the thick coating you used to see on a lifeguard's nose—because the particles of titanium dioxide or zinc oxide were large. To make those sunscreens more transparent and less chalky looking, titanium and zinc are now often engineered into tiny nanoparticles. The problem: There's a perception that those tiny particles can penetrate skin and build up in the body, potentially causing health effects. Some sunscreen manufacturers now use "non-nano" minerals in their products that they claim are slightly larger than nanoparticles. Whether that claim is true or consumer concern about nanparticles overall is warranted isn't entirely clear.

LIP SERVICE

Don't forget to protect your pucker while you're out in the sun. Our lips not only have a thinner protective top layer of cells compared with the rest of our skin but the bottom lip also tends to protrude slightly, making it especially vulnerable to UV assault.

We tested five lip balms labeled SPF 30 or higher. All but one is claimed to have water resistance for 80 minutes. Though each received an Excellent UVA score, none of them met their SPF claim. **Banana Boat Sport Performance Lip Balm SPF 50,** *$2.50,* came closest to an SPF 30, providing an SPF 28.

Q *I'm always in the water. Why can't I find a waterproof sunscreen?*

NO SUCH PRODUCT exists. The FDA doesn't allow the term to be used for sunscreens. ("Sweatproof" is also prohibited.) Instead, the FDA allows a sunscreen to be labeled water resistant for 40 or 80 minutes, whichever the manufacturer's test shows. But you still need to reapply it when you get out of the water.

Shiseido claims that soaking in water actually enhances the protection of its WetForce Ultimate Sun Protection Lotion SPF 50+. We tested it on test subjects' dry skin and again after they soaked in water for 30 minutes (the amount of time Shiseido says it takes to activate the enhanced protection). We found that the product met its SPF claim and got an Excellent UVB Rating, but the sunscreen performed the same on wet skin as it did on dry skin. When we contacted the company in August for comment, it said: "It is our policy not to comment on testing done outside of the auspices of our company." It also said that our findings may vary from theirs because of differences in test protocols.

Q *I'd use sunscreen if it wasn't so streaky and sticky. Does a user-friendly one even exist?*

MANY PRODUCTS ARE formulated to feel and smell good, and our sensory experts have identified some of the best (see "Crowd Pleasers," on page 25). Still, you can minimize the amount of sunscreen you use by wearing sun-protective clothing and hats. For instance, if you wear a long-sleeve shirt with a UPF (ultraviolet protection factor) of 50 or higher, you don't have to put sunscreen on your torso and arms. Don a densely woven hat and you can skip sunscreen on your scalp. For the best protection, choose one with a wide (3 inches or more) brim.

Because eyelids are very susceptible to

(continued on page 26)

Crowd Pleasers

What would you do if you bought a sunscreen and didn't like the way it smelled, felt, or looked on your skin? More than a third of consumers in our new national survey of 1,000 sunscreen users would give away a sunscreen they did not like—and 20 percent would toss it. Fortunately, the insights from our sensory test panel can help you find a sunscreen that you'll actually use. Here are our highest-rated picks that solve your biggest sunscreen complaints.

49% want an unscented sunscreen

1 | **Pure Sun Defense SPF 50 lotion** and **2** | **La Roche-Posay Anthelios 60 Melt-In Sunscreen Milk lotion** have just a hint of the plastic scent you sometimes get in unscented products.

43% dislike a sunscreen that leaves a white film

The good news: None of our recommended sunscreens will make you look like a ghost.

31% look for a tropical, coconut scent

3 | **Banana Boat SunComfort Continuous Spray SPF 50+** has a slight pina colada scent.

A SUNSCREEN THAT DOES IT ALL

5 | **No-Ad Sport SPF 50 lotion** is super-protective and ticks off all of the top wishes—nongreasy, fragrance-free, and no white streaks. Bonus: It's priced at just $10 for a 16-ounce bottle, or 63 cents per ounce.

51% don't want one that leaves an oily sheen on their skin

2 | **La Roche-Posay Anthelios 60 Melt-In Sunscreen Milk lotion**, our top-rated sunscreen, was very lightweight, but it's pricey—$36 for a 5-ounce bottle, or $7.20 per ounce.

4 | **Aveeno Protect + Hydrate SPF 30** really is sheer, and at $10 for 8 ounces, or $3.33 per ounce, is about half the cost.

42% don't want a sunscreen to feel greasy

6 | **Equate Sport Continuous Spray SPF 50** from Walmart doesn't leave a film or sheen on your skin.

PROP STYLING: MEGUMI EMOTO

PHOTOGRAPH BY JAMIE CHUNG

UV damage (5 to 10 percent of skin cancer occurs here), sunglasses are also de rigueur. The ideal shades should block 99 to 100 percent of UVA and UVB rays, and be of sufficient size to shield the eyes and surrounding areas–the more skin covered, the better. But because sunglasses and hats can't cover your entire face, you'll still need sunscreen.

Q *Do I need a special product for my face?*

NOT NECESSARILY, but you may still want to use one. The active ingredients in face and body sunscreens are the same, but the base of the products are formulated to suit the needs of different skin types, explains Arielle Kauvar, M.D., clinical professor of dermatology at New York University School of Medicine. For example, many facial sunscreens are oil-free, which is a boon for those with oily or acne-prone complexions. Oil-free products are usually lighter as well, which allows them to be used under makeup without feeling greasy.

Facial sunscreens often have no fragrance or a light scent, and because fragrances are one of the major causes of skin irritation, that is a plus if you have sensitive skin. The facial sunscreen that did best in our tests, Avon Sun+ Sunscreen Face Lotion SPF 40, is oil-free but contains a moderate amount of floral and citrus aroma. Second place went to Target's Up & Up Ultra Sheer SPF 30, which has little aroma. If you don't want to pay a premium for a separate face sunscreen but want one that's lightweight, avoid ultra-high SPFs. In general, those products contain higher levels of active ingredients that can make them seem heavier on skin.

SUMMER'S TOUGHEST STAIN

Most of the 68 sunscreens in our tests come with a warning that the product may stain clothing. But 19 didn't mention staining at all, so we put them to the test. We smeared black and white cotton and polyester fabric swatches with each product. We let the swatches sit for about 24 hours, then washed them in cold water. After they air-dried, we washed them again. Only two of the sunscreens, CeraVe Face Lotion SPF 30 and Kiss My Face Baby's First Kiss SPF 50, came out of the wash stain-free. Ingrid Johnson, a professor in the textile development and marketing department at the Fashion Institute of Technology in New York City, says that baby powder or corn starch may absorb the sunscreen. Once the powder turns damp, you can brush it off—and maybe the stain along with it.

Q *Does sunscreen work past its expiration date?*

ALMOST 60 PERCENT of the people in our latest survey check the expiration date on a bottle of sunscreen before they use it. They're wise to do so because the active ingredients can deteriorate over time, rendering the product less protective.

Not all sunscreens have expiration dates printed on the bottles, though; in that case, our experts recommend using a permanent marker to write the purchase date on the bottle. And the way you store your sunscreen matters, too: Though products will maintain their original strength for three years, if they've been exposed to high temperatures (for example, by being stuffed in the glove box or trunk of your car) or have obvious changes in color or consistency, it's smart to buy a fresh bottle, just to be safe.

PROTECTION FROM THE INSIDE OUT?

One manufacturer claims its drinkable supplement guards against UV skin damage

If you down a bottle of an orange-peach drink 30 minutes before going outside, you'll get 3 to 5 hours of sun protection—at least that's the claim of UVO, which the company says is the "first ready to drink vitamin supplement specifically formulated to protect and repair your skin from sun damage." The company also asserts that the drink's 30-plus vitamins, antioxidants, and phytonutrients are "scientifically proven to work." As with other supplements, UVO ($20 for four 12-ounce bottles) does not need prior approval from the Food and Drug Administration to make those claims.

Founder and CEO of UVO, dermatologist Bobby Awadalla, M.D., says the company's preliminary testing, similar to what the FDA requires for sunscreens, found that drinking UVO protected against sunburn for at least 3 hours. He would not supply us with the study, however, saying that he wanted to publish the research, and could not if he released the results.

Consumer Reports did not test UVO, so we can't verify the company's claims. Research suggests that some of the individual ingredients in the drink may offer UV protection, but we know of no independent study of UVO or its combination of ingredients. Even if the product does what it claims, protection would be modest at best: It can't replace sunscreen. Awadalla said he agrees with that, but based on the company's marketing, a consumer could easily assume otherwise. There is no mention of using sunscreen on the bottle, and though the warning "should not be used as the only source of sun protection" is on the company's website, it is not prominently displayed. Our advice: Skip UVO and other supplements like it.

THE SORRY STATE OF SUNSCREENS

All sunscreens should live up to the SPF claim on their labels–the Food and Drug Administration requires it. But for four years straight, we found that many sunscreens in our tests fall short.

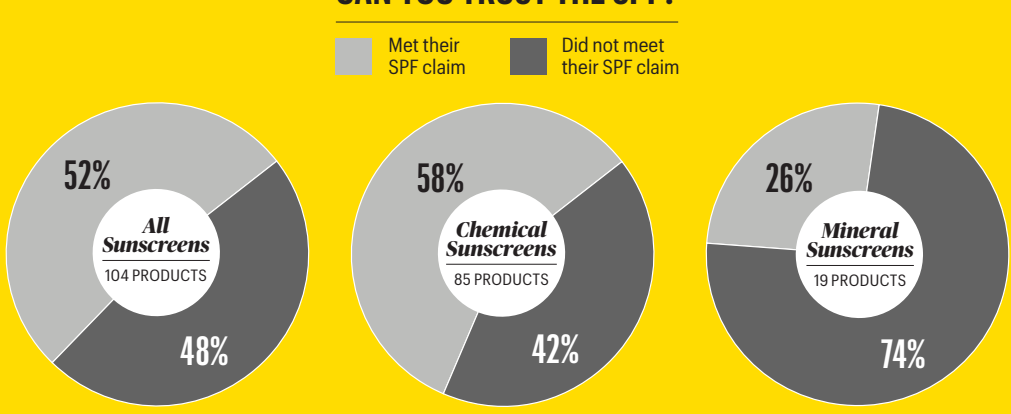
We crunched the data from four years of our sunscreen testing—104 products in all—to see how well sunscreens in general protect you against the sun's UVB rays. Our findings were troubling, especially when it came to mineral products—those that contain only titanium dioxide, zinc oxide, or both as active ingredients.

The FDA doesn't routinely test sunscreens; it requires the manufacturers to test their products. But in most cases the companies don't have to submit their results, just keep them on hand in case the FDA asks to see them. What's more, companies only have to test a sunscreen on people when a product rolls out or is reformulated.

Consumers have a right to receive the level of protection they expect. We're submitting our four-year results to the FDA and asking that it review its sunscreen requirements and investigate further.

In our tests almost half of the products failed to meet their SPF claim after water immersion—despite the fact that all featured claims of water resistance. And if you trust your skin to mineral products, you're taking a greater chance; the mineral-only sunscreens performed far worse than the chemical formulations.

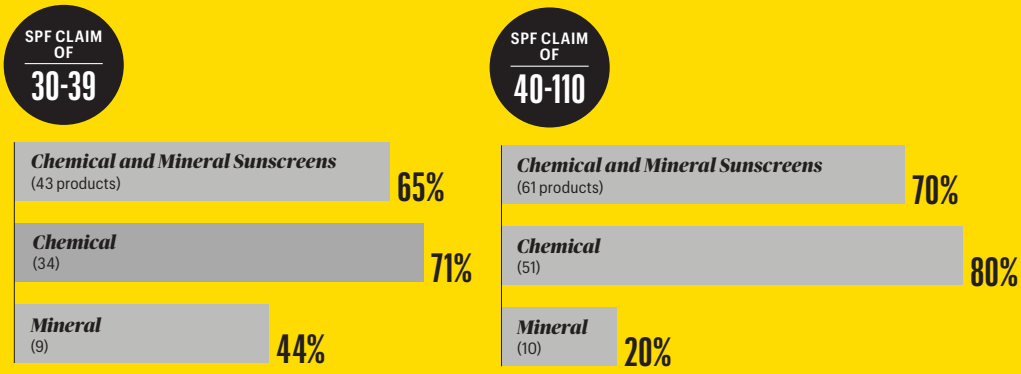
CAN YOU TRUST THE SPF?



When we separated the sunscreens into categories based on the claimed SPF, we found that a significant percentage tested below the number on the bottle. That was true at every SPF level. So your best bet is to pick a recommended sunscreen from our Ratings. But if you can't, choosing a chemical sunscreen with an SPF of 40 or higher will give you a better chance of getting at least an SPF 30, the minimum level many dermatologists recommend.

A RELIABLE NUMBER

Percentage of sunscreens that tested SPF 30 or higher



RATINGS: Sunscreen Lotions, Sprays, and Sticks

Scores in context: All products claimed water resistance for either 40 or 80 minutes. Recommended products met their SPF claim, scored 80 or higher overall, and provided Excellent or Very Good UVA and UVB protection. UVB score is based on the results of our tests after water immersion.

☑ CR Best Buy ☑ Recommended

● Excellent ◓ Very Good ○ Good ◒ Fair ● Poor

Rec.	Rank	BRAND & PRODUCT	COST PER OZ. ($)	CONTENTS (OZ.)	PRICE PER PACKAGE ($)	CLAIMED SPF	TESTED SPF	UVA	UVB (SPF)	SCORE
A. LOTIONS										
☑	1	**La Roche-Posay** Anthelios 60 Melt-In Sunscreen Milk	$7.20	5	$36	60	Meets Claim	●	●	100
☑	2	**Pure Sun Defense** SPF 50 Disney Frozen [1]	$0.79	8	$6.30	50	Meets Claim	●	●	98
☑	3	**Coppertone** Water Babies SPF 50	$1.31	8	$10.50	50	Meets Claim	●	●	98
☑	4	**Equate** Ultra Protection SPF 50 (Walmart)	$0.49	16	$7.85	50	Meets Claim	●	●	94
☑	5	**No-Ad** Sport SPF 50 [2]	$0.63	16	$10	50	Meets Claim	●	●	88
☑	6	**Ocean Potion** Protect & Nourish SPF 30	$1	8	$8	30	Meets Claim	●	◓	87
☑	7	**Aveeno** Protect + Hydrate SPF 30	$3.33	3	$10	30	Meets Claim	●	◓	84
	8	**BullFrog** Land Sport Quick Gel SPF 50	$2.20	5	$11	50	40	●	◓	80
	9	**Neutrogena** CoolDry Sport with Micromesh SPF 30	$1.90	5	$9.50	30	Meets Claim	●	○	78
	10	**Coppertone** Clearly Sheer SPF 50	$2	5	$10	50	35	●	◓	76
	11	**Neutrogena** Ultra Sheer Dry-Touch SPF 45	$3.17	3	$9.50	45	31	●	◓	75
	12	**Ocean Potion** Protect & Renew Body SPF 45	$1.25	6	$7.50	45	32	●	◓	73
	13	**Banana Boat** Protect & Hydrate 2 in 1 SPF 30	$1.67	6	$10	30	Meets Claim	●	○	72
	14	**Hawaiian Tropic** Sheer Touch Ultra Radiance SPF 50	$1.31	8	$10.50	50	28	●	○	70
	15	**Coppertone** UltraGuard SPF 70+ [2]	$1.38	8	$11	70+	59	●	●	68
	16	**Palmer's** Eventone Cocoa Butter Moisturizing SPF 30	$1.18	8.50	$10	30	Meets Claim	◓	◓	67
	17	**Alba Botanica** Very Emollient Sport SPF 45 [3]	$2.88	4	$11.50	45	Meets Claim	○	●	67
	18	**Banana Boat** SunComfort SPF 30	$1.75	6	$10.50	30	22	●	○	54
	19	**Hawaiian Tropic** Sheer Touch Ultra Radiance SPF 30	$1.31	8	$10.50	30	21	●	○	52
	20	**Kiehl's** Activated Sun Protector SPF 30	$5.80	5	$29	30	21	●	○	51
	21	**Cotz** Plus SPF 58 [2] [3]	$8	2.50	$20	58	38	◓	◓	49
	22	**CVS** Sheer Sun Lotion SPF 30	$1.13	8	$9	30	19	●	◒	47
	23	**California Baby** Super Sensitive SPF 30+ [3]	$6.90	2.90	$20	30+	Meets Claim	○	○	44
	24	**Babyganics** Mineral-Based SPF 50+	$2.17	6	$13	50+	25	○	○	44
	25	**Blue Lizard** Regular SPF 30+	$3.60	5	$18	30+	Meets Claim	○	○	42
	26	**Vanicream** SPF 50+ [3]	$4.50	4	$18	50+	17	●	◒	41
	27	**Shiseido** WetForce Ultimate Sun Protection Lotion for Face and Body SPF 50+	$12.12	3.30	$40	50+	Meets Claim	◒	●	40
	28	**California Kids** #supersensitive SPF 30+	$6.90	2.90	$20	30+	Meets Claim	◒	◓	40
	29	**Bare Republic** Natural Mineral Sport SPF 50 [3]	$4.41	3.40	$15	50	18	◓	◒	38
	30	**Kiss My Face** Baby's First Kiss SPF 50 [3]	$4	4	$16	50	22	○	○	38
	31	**Solar Sense** Clear Zinc High Performance Sport SPF 50+ [2]	$2.12	5	$10.60	50+	27	○	○	36
	32	**Yes to Cucumbers** Natural SPF 30 [3]	$4	3	$12	30	14	●	◒	35
	33	**Aloe Gator** SPF 40+ Gel	$3.25	4	$13	40+	Meets Claim	●	●	21
	34	**Banana Boat** Kids Tear-Free, Sting-Free Lotion SPF 50	$1.25	8	$10	50	8	●	●	21
	35	**CVS** Kids Sun Lotion SPF 50	$1.13	8	$9	50	8	●	●	19

How we test sunscreens. To check for UVB protection, a standard amount of each sunscreen is applied to small areas of our panelists' backs. Then they soak in a tub of water. Afterward, each of those areas is exposed to six intensities of UVB light from a sun simulator for a set time. About a day later, the six spots are examined for redness. The resulting UVB ratings reflect each product's actual effectiveness after water immersion. (The tested sunscreens carry a claim of water resistance for 40 or 80 minutes.) **Tested SPF** is based on the average results for each sunscreen, not how close a sunscreen comes to meeting its SPF claim, and is used to calculate our UVB scores. To test for UVA, we smear sunscreen on plastic plates and pass UV light through and measure the amount of UVA and UVB rays that are absorbed. That information is then used to calculate our **UVA score.**

Scan any page in this section using the Blippar app to watch videos and shop for products *(see page 7 for details).*

Rec.	Rank	BRAND & PRODUCT	COST PER OZ. ($)	CONTENTS (OZ.)	PRICE PER PACKAGE ($)	CLAIMED SPF	TESTED SPF	UVA	UVB (SPF)	SCORE
B. SPRAYS										
✔	1	**Trader Joe's** Spray SPF 50+	$1	6	$6	50+	Meets Claim	●	●	100
✔	2	**Banana Boat** SunComfort Continuous Spray SPF 50+	$1.67	6	$10	50+	Meets Claim	●	●	97
✔	3	**Neutrogena** Beach Defense Water + Sun Protection SPF 70	$1.62	6.50	$10.50	70	Meets Claim	◓	●	88
✔	4	**Caribbean Breeze** Continuous Tropical Mist SPF 70	$2.77	6	$16.60	70	Meets Claim	◓	●	84
✔	5	**Equate** Sport Continuous Spray SPF 30 (Walmart) [2]	$0.83	6	$4.98	30	Meets Claim	●	◓	84
✔	6	**DG Body** Sport SPF 30 (Dollar General) [2]	$0.88	6	$5.25	30	Meets Claim	●	◓	82
	7	**Rite Aid** Renewal Sport SPF 30 [2]	$1.33	6	$8	30	Meets Claim	●	○	79
	8	**CVS** Sport Clear Spray SPF 30 [2]	$1.42	6	$8.50	30	Meets Claim	●	○	79
	9	**Banana Boat** Sport Performance with Power Stay Technology SPF 100	$1.67	6	$10	100	36	●	◓	77
	10	**No-Ad** Sport Spray SPF 30	$1	10	$10	30	Meets Claim	●	○	76
	11	**Up & Up** Sport SPF 30 (Target) [2]	$0.83	6	$5	30	Meets Claim	●	○	75
	12	**Hawaiian Tropic** Island Sport Ultra Light SPF 30	$1.75	6	$10.50	30	Meets Claim	●	○	74
	13	**Australian Gold** Continuous Clear 30	$1.75	6	$10.50	30	Meets Claim	●	○	69
	14	**Neutrogena** Wet Skin SPF 30 [2]	$1.90	5	$9.50	30	Meets Claim	●	○	68
	15	**Banana Boat** Sport Performance CoolZone SPF 30	$1.50	6	$9	30	Meets Claim	●	○	67
	16	**Banana Boat** Sport Performance Clear UltraMist with Powerstay Technology SPF 50+	$1.50	6	$9	50+	24	●	○	59
	17	**Goddess Garden** Organics Everyday Natural 30 [3]	$3.67	6	$22	30	Meets Claim	◒	○	40
	18	**EltaMD** UV Aero SPF 45 [3]	$4.67	6	$28	45	22	◒	○	26
C. STICK SUNSCREENS										
✔	1	**Coppertone** Kids Stick SPF 55 [2]	$9.17	0.60	$5.50	55	Meets Claim	◓	●	87
✔	2	**Up & Up** Kids Stick SPF 55 (Target) [2]	$5.83	0.60	$7	55	Meets Claim	◓	●	84
	3	**Neutrogena** Beach Defense Water + Sun Protection Stick SPF 50+	$7	1.50	$10.50	50+	42	●	●	74
	4	**Banana Boat** Ultra Defense Stick SPF 50 [2]	$10	0.55	$5.50	50	35	●	◓	58
D. FACIAL SUNSCREENS										
✔	1	**Avon** Sun+ Sunscreen Face Lotion SPF 40	$3	3	$9	40	Meets Claim	●	◓	85
✔	2	**Up & Up** Ultra Sheer SPF 30 (Target)	$1.73	3	$5.20	30	Meets Claim	●	◓	83
	3	**Neutrogena** Clear Face SPF 55	$4	3	$12	55	37	●	◓	78
	4	**Rite Aid** Renewal Oil Free Faces SPF 30	$2.43	3	$7.30	30	Meets Claim	●	○	70
	5	**Neutrogena** Clear Face SPF 30	$3.83	3	$11.50	30	20	●	◒	48
	6	**CVS** Breakout Free Face SPF 30	$3.50	3	$10.50	30	16	●	◒	39
	7	**SkinCeuticals** Physical Fusion UV Defense SPF 50 [3]	$20	1.70	$34	50	Meets Claim	◒	●	37
	8	**CeraVe** Face Lotion SPF 30 [2] [3]	$5.60	2.50	$14	30	15	●	◒	32

[1] Pure Sun Defense SPF 50 Disney Frozen is one model of this product. Other models include Avengers, Despicable Me, Spiderman, and other cartoon characters, which should have similar performance. [2] Contains retinol or retinyl palmitate, which pregnant women may want to avoid. [3] Contains only the mineral active ingredients titanium dioxide, zinc oxide, or both.

The ABCs of SPF. The sun protection factor (SPF) is a relative measure of how long a product will protect you from UVB rays, the chief cause of sunburn. Assuming you use it correctly, if you'd burn after 20 minutes in the sun, an SPF 30 protects for about 10 hours. But intensity and wavelength distribution of UVB rays vary throughout the day and by location. And that calculation does not apply to UVA rays, which contribute to wrinkles and skin cancer. That's why you need a broad-spectrum sunscreen that provides protection against both types. However, no sunscreen blocks 100 percent of UVA or UVB rays.

PUT SOME SIZZLE IN YOUR SUMMER

We reveal the best grills, accessories, and safety tips to make every one of your cookouts a smoking-hot success

BY KIMBERLY JANEWAY

CONSIDER THE LIFE OF A GRILL. It stands outside, exposed to the elements, sometimes year-round. When the grill works, it's the life of the party. But when grease builds up, spiders haunt the burner tubes, and corrosion kicks in, the party's over.

Of course, you'll never find "Great while it lasts!" emblazoned on a grill box. So we asked almost 16,000 subscribers about the reliability of their grills to learn which brands are in it for the long haul and which are likely to break down after just a summer fling or two (see "Grills That Go the Distance," on page 37). We also asked almost 7,000 subscribers how satisfied they are with their grills. Turn to page 35 to see how the brands stack up. (Hint: None of them did terribly.)

If this is the year to haul your "old reliable" to the curb and shop for a new model, you'll want to know the differences between grills that cost $300 and the ones that cost $1,000 and more. We spell it all out for you on page 32 with a lineup of top grills in a variety of prices.

Every great griller deserves great tools. On page 34 we present a few that will help you expand your culinary repertoire (pizza, anyone?), boost your grill's performance, and prepare food safely.

We also tested two hybrid grills–which allow you to cook with both gas and charcoal–and we report the surprising findings of our expert taste testers on the question of whether cooking with charcoal makes a tastier burger than cooking with gas. We even tested a quick-assemble grill to see whether it lives up to its claim of being ready for action just 10 minutes out of the box. Summertime is short enough as it is.

The Napoleon Prestige Pro 665RSIB *$2,600*

Has five burners and a rotisserie and is a top performer in the top price range. To see how it rated turn to page 32.

PROP STYLING: MEGUMI EMOTO

Scan any page in this section using the Blippar app to shop for grills and for videos on grilling, grill maintenance, and more *(see page 7 for details)*.

PHOTOGRAPH BY JAMIE CHUNG

GRATE EXPECTATIONS

Grills can start at less than $300 and run to more than $1,000. Here's a guide to common features in three price ranges.

$300 OR LESS

Inexpensive portable, small, and midsized grills don't have all the bells and whistles of high-priced models, but many can still get the job done.

WHAT YOU GET. Usually, a shorter (one- to five-year) warranty on burners, the part that's most likely to fail. Stainless-steel or coated cast-iron grates are both good for searing and maintaining even temperatures, but stainless are more durable. An electronic igniter is usually more convenient than a rotary or push-button type, though not every grill at this price will have one.

SHOPPING TIP. Construction may not be top-notch. Nudge grill from several points to test its sturdiness. Look for sharp edges. Lift grates to see if they're heavy-duty or flimsy.

A MIDSIZED MODEL FOR EVEN GRILLING
Nexgrill 720-0830H *$270*
RATING 77

Char-Broil 463433016 *$170*
RATING 74

Huntington 630124 *$140*
RATING 74

$450 TO $1,000

Midrange grills come in small, medium, and large sizes, and can deliver impressive performance. They also tend to be sturdier than less expensive models.

WHAT YOU GET. Expect heavy-duty stainless or cast-iron grates and a side burner for, say, sautéing onions or simmering sauce. Most have an electronic igniter and burner warranties of 10 years or more, and come on four wheels or casters for easy moving. Some come with a fuel gauge, a nice extra that reminds you when it's time for a refill.

SHOPPING TIP. Check the manufacturer's specs on the weight limit of the side burner, so you know how heavy a pot it can hold. Grip the handle to check for clearance: You won't want your knuckles to be too close to a hot lid.

SMALL IN SIZE, BIG IN CONVENIENCE
Weber Spirit E-220 *$450*
RATING 71

KitchenAid 720-0893 *$900*
RATING 67

Weber Genesis S-330 *$970*
RATING 70

PHOTOS: JOHN POWERS AND BRENDAN WIXTED

Scan any page in this section using the Blippar app to shop for grills and for videos on grilling, grill maintenance, and more *(see page 7 for details).*

$1,000 AND UP

These pricey performers are usually stainless steel and sold at specialty stores and on the websites of big-box stores.

WHAT YOU GET. Expect high-quality stainless, the heaviest-duty grates (stainless steel or coated cast iron), and burner warranties of 10 years or longer. Features may include searing burners; rotisserie burners with motorized spit; LED lights inside the grill, so you can flip your burgers in the dark; and a pullout tray for the propane tank.

SHOPPING TIP. Certain grills allow you to use natural gas. Others offer a conversion kit for $50 to $100. Once hooked up to your natural gas line, there's no need for propane tanks and no running out of gas, but the grill will be less mobile. You'll also need a pro to run the gas line.

A BIG, STURDY PERFORMER

Napoleon Prestige Pro 665RSIB *$2,600*
RATING 72

Weber Summit E-670 *$2,500*
RATING 68

Napoleon Legend LA400 *$1,000*
RATING 71

CLAIM CHECK

START YOUR FUN IN A SNAP?

We put a quick-assemble grill to the test

Assembling a new grill right out of the box usually involves wrestling with several unwieldy parts, squinting one's way through an indecipherable set of instructions, searching fruitlessly for at least one missing screw, and letting loose with some hair-raising swear words. (Small children, steer clear.) So when we saw that Hamilton Beach describes its *$500* **Quick Assembly Grill (84341)** as a "snap" to set up "in about 10 minutes," we considered testing that claim an act of public service.

We bought two of the midsized grills and gave one each to Consumer Reports' Rich Handel, who has assembled dozens of grills as an assistant project leader in our test laboratories, and editor Dan DiClerico—a whiz with words but not widgets. (A third staffer stood by to help out when instructions called for it.)

Neither of our test subjects was able to put the grill together in 10 minutes—not even close. Rich's grill was ready for action in 18 minutes; Dan took a respectable half-hour to finish his. (Those times don't include the roughly 10 minutes spent unpacking the grill, reading the manual, or watching the brief video Hamilton Beach recommends.)

A Hamilton Beach rep said the company stands by its 10-minute assembly claim.

BOTTOM LINE. Though the grill did not meet the 10-minute claim in our test, we don't dispute that it's relatively quick to assemble. In fact, it took half the time, start to finish, that it takes to put together similarly sized grills that don't make the "snap" claim.

The Hamilton Beach preheats fast but didn't do well in our tests for even heating. It earned a rating of 57.

WATCH

Go to ConsumerReports.org/quickgrill to see Rich and Dan in action. Don't worry, it's time-lapse photography, so it's a short video.

ILLUSTRATION BY MICHAEL BRANDON MYERS

Oregon Scientific wireless thermometer, *$40;* **GrillGrates,** *$85*

Add Some Thrills to Your Grill

Sure, you can cook a stellar steak without any of these accessories. But with the versatility and safety they add to your outdoor culinary creations, why would you want to?

Digital Meat Thermometers *$20 to $40*
Eliminate guesswork behind cooking meat thoroughly. Among the instant-read models we tested, the *$20* **ThermoWorks Pocket RT600C** is easy to use and offers fast, consistently accurate readings and auto-shutoff. The *$40* **Oregon Scientific Wireless BBQ/Oven AW131** (shown) is designed to be left in the meat while it cooks. It can be read on a smartphone from more than 100 feet away and offers impressive, consistent accuracy and handy features such as a timer, audible alert, and auto-shutoff.

BakerStone Pizza Oven Box *$120*
For grills with three or more burners, place this big, 27-pound, porcelain-enameled steel box on top of the grates. The box houses a stone cooking chamber that concentrates heat to cook the pizza's top and bottom. We preheated the box for 30 minutes and baked eight fresh 12-inch pizzas in quick succession. They took only about 4 minutes each to bake (and were eaten almost as quickly by testers).

GrillGrates *$85*
These interlocking panels made of anodized aluminum sit atop a grill's grates. They're meant to keep temperatures even across the grill and block flare-ups that char food. When we tested them, the grates improved evenness on one grill but not the other, so performance depends on the grill. Flare-ups were reduced when grilling fish but less so with burgers. Price is for a four-pack, which covers a midsized grill's cooking area.

Grill Baskets and Pizza Stones
$15 to $80
Look for a grill basket with small holes to let juices drain so that vegetables won't get soggy and shrimp won't fall through. White pizza stones are tougher to keep clean than dark ones, but all got very hot (for crispy crusts) in our tests and need careful monitoring to prevent pizza from burning.

COOK WITH CONFIDENCE

It doesn't matter how beautifully browned your burger looks: If it's not cooked properly, it could make you sick. Be sure to:

- Wash hands, countertops, cutting boards, plates, platters, and utensils with hot, soapy water after they're exposed to raw meat.
- Cook ground beef to 160° F, poultry to 165° F (check with a meat thermometer). Rare or medium-rare burgers don't reach a temperature high enough to kill harmful bacteria.
- Steaks that have been mechanically tenderized (check the label) should always be cooked to 160° F. The tenderizing process can drive surface bacteria deep into the meat, making it more difficult to kill.
- Eating heavily charred food can expose you to potentially cancer-causing compounds. Using a marinade may reduce the risk.

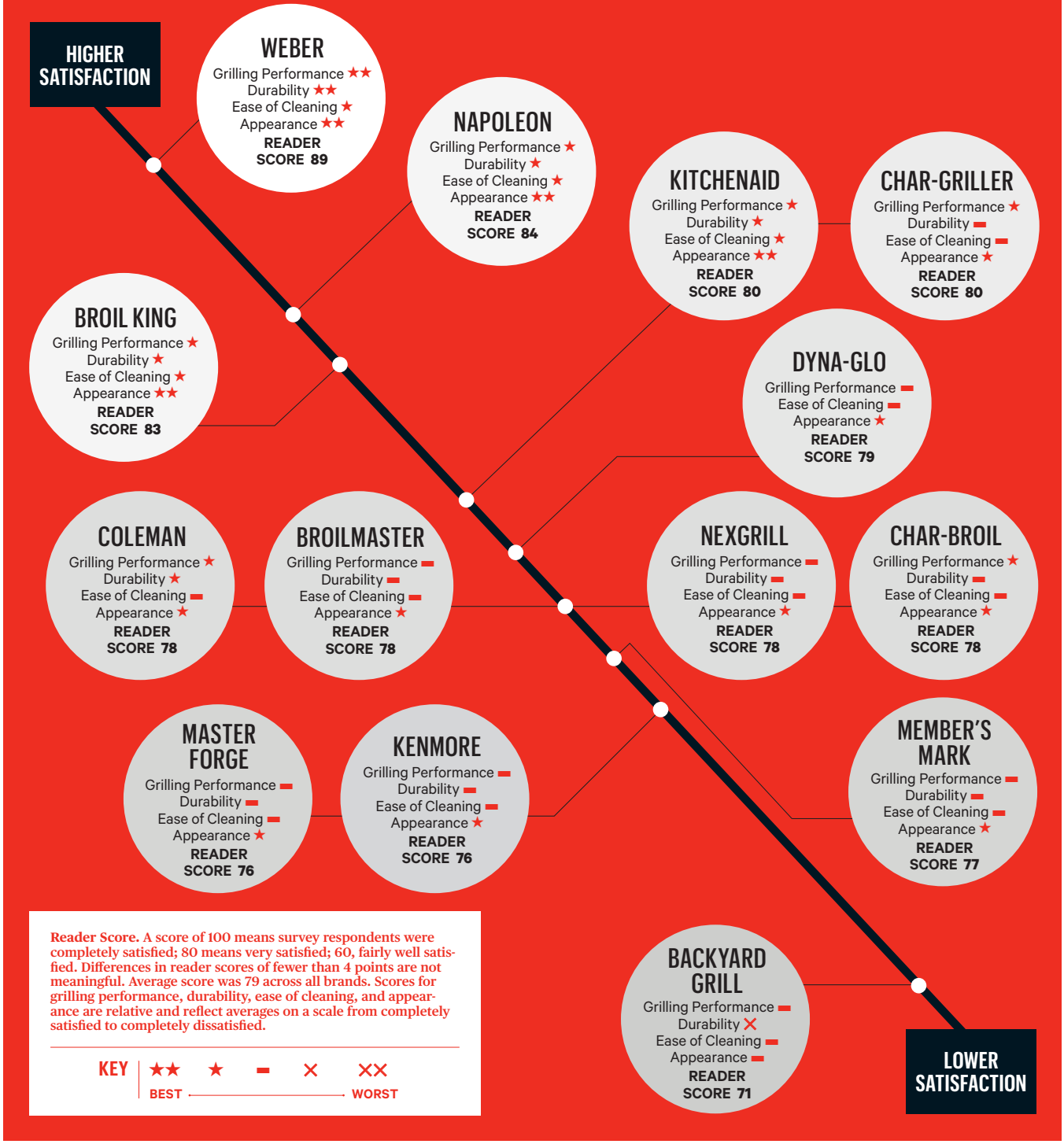
PROP STYLING: MEGUMI EMOTO; ILLUSTRATION: MICHAEL BRANDON MYERS

Scan any page in this section using the Blippar app to shop for grills and for videos on grilling, grill maintenance, and more *(see page 7 for details).*

PHOTGRAPH BY JAMIE CHUNG

READERS WEIGH IN ON BRANDS

We surveyed almost 7,000 subscribers to find out how satisfied they were with their grill overall and with its grilling performance, durability, ease of cleaning, and appearance after about a year of use. Here's how the results stacked up.



Reader Score. A score of 100 means survey respondents were completely satisfied; 80 means very satisfied; 60, fairly well satisfied. Differences in reader scores of fewer than 4 points are not meaningful. Average score was 79 across all brands. Scores for grilling performance, durability, ease of cleaning, and appearance are relative and reflect averages on a scale from completely satisfied to completely dissatisfied.

KEY | ★★ ★ – × ××
BEST → WORST

Hybrid Grills: Doing Double Duty

Gas-grill loyalists want to fire up fast; charcoal fans say nothing beats the flavor of cooking over briquettes. We tested two grills that let you do both.

Char-Broil Gas2Coal Hybrid 463340516 *$300*

An insert converts the gas firebox for charcoal use.
RATING 66

BRICK VS. GAS: THE TASTE-TEST SHOWDOWN

Die-hard fans of charcoal say it delivers superior taste. To find out, we had five of our food pros do side-by-side blind taste tests of gas-grilled and charcoal-grilled hamburger patties. They concluded that the flavor differences were negligible and would disappear once the burger was on a bun with toppings. Of course, for the unmistakable summer scent of charcoal smoke, there's only one way to go.

Char-Broil Gas2Coal

This midsized grill allows you to cook with either gas or charcoal in the same firebox but not both at the same time. Igniting the charcoal is easy using the gas burners.

GAS PERFORMANCE. The grill surface can hold between 18 and 28 burgers. Preheating was excellent: After 10 minutes we tossed on burgers that displayed a serious sizzle. But temperature evenness wasn't stellar, so you'll need

ILLUSTRATION: MICHAEL BRANDON MYERS

Scan any page in this section using the Blippar app to shop for grills and for videos on grilling, grill maintenance, and more *(see page 7 for details)*.

PHOTGRAPH BY JAMIE CHUNG

Dyna-Glo Dual Fuel DGB-730SNB-D *$570*

Two separate fireboxes let you cook with gas and charcoal at the same time.
RATING 61

PROP STYLING: MEGUMI EMOTO

to move food around to cook it evenly. Indirect cooking and temperature range were very good, making this a versatile cooker.

CHARCOAL PERFORMANCE. It gets the job done, but with some compromises. The charcoal tray reduces the grilling area to the size of a small grill's. Heat was uniform across the grill surface, but charcoal didn't get the grill as hot as gas did, and the temperature started to drop about 30 minutes after the coals were ready. The tray holds just one layer of charcoal, and you can't adjust its height. So cook fast and keep an eye on the food.

Dyna-Glo Dual Fuel

This grill has two fireboxes of equal size—one for charcoal and the other for gas. They can be used simultaneously.

GAS PERFORMANCE. Its small grilling surface can fit fewer than 18 burgers. After preheating for 10 minutes, it wasn't hot enough, so a longer preheat is required. Heat was even across the surface, but the temperature range is narrow, so this grill is not as versatile as the Char-Broil. Indirect cooking was impressive.

CHARCOAL PERFORMANCE. Now we're talking. The firebox is the kind used in a typical charcoal grill, including air vents, and the height of the charcoal tray can be adjusted. Like with the Gas2Coal grill, the cooking area is small. To fire up, use lighter fluid, an electric lighter, or a charcoal chimney. The charcoal produced even heating across the grill surface, though it didn't get as hot as with gas. The temperature began to drop about 30 minutes after the coals were ready, but more charcoal can be added while cooking, unlike with the Char-Broil.

RELIABILITY SURVEY

GRILLS THAT GO THE DISTANCE

In our survey of 15,931 grill owners, no single brand stood out as the most or least reliable, but Coleman, Weber, and Broil King are less repair-prone than Char-Griller, Kenmore, and Member's Mark (sold at Sam's Club). Based on our survey, we estimate that 19 percent of Kenmore grills will need repairs or have serious problems within three years after purchase; we estimate that 23 percent of Member's Mark grills will need repairs after three years. Given those findings, we cannot recommend those two brands.

PERCENT LIKELY TO NEED REPAIR AFTER 3 YEARS

GAS GRILLS

Member's Mark	23%
Kenmore	19%
Char-Griller	18%
Char-Broil	15%
Broilmaster	12%
Napoleon	12%
Broil King	11%
Weber	10%
Coleman	8%

From Consumer Reports' 2015 Annual Grills Survey of subscribers who bought a new grill between 2010 and 2015. Differences of fewer than 7 points aren't meaningful, and models within a brand may vary.

RATINGS: Gas Grills: The Heat is On

Of the 151 gas grills we bought and tested, the highest scored 77; the lowest, 26. Below are the highest-scoring grills in order of performance in each category. Similar models appear next to tested grills, and we expect them to perform comparably. We don't recommend Kenmore and Member's Mark grills, given their high repair rate. For full Ratings, available to online subscribers, go to ConsumerReports.org

☑ CR Best Buy ☑ Recommended

● Excellent ◓ Very Good ○ Good ◒ Fair ● Poor

Recommended	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULTS					FEATURES			
					Evenness Performance	Preheat Performance	Temperature Range	Indirect Cooking	Convenience	Stainless-Steel Grates	Coated Cast-Iron Grates	Igniter Type	Burner Warranty (10 or More Years)
MIDSIZED (ROOM FOR 18 TO 28 BURGERS)													
☑	1	**Nexgrill** 720-0830H (Home Depot)	$270	**77**	●	●	◓	◓	○	●		Electronic	
☑	2	**Backyard Grill** BY16-101-003-05/GBC1646WS (Walmart)	$150	**76**	◓	●	◓	◓	○		●	Rotary	
☑	3	**Char-Broil** 463433016 (Walmart)	$170	**74**	◓	●	◓	◓	○		●	Electronic	
☑	4	**Weber** Spirit SP-320 46700401 Spirit SP-310 46500401	$600	**74**	●	○	○	●	●	●		Electronic	●
	5	**Kenmore** Elite 33577	$1,000	**73**	●	○	◓	◓	●	●		Electronic	●
	6	**Better Homes and Gardens** BH15-101-099-04 (Walmart)	$350	**73**	●	◓	○	◓	○	●		Electronic	
	7	**Nexgrill** Deluxe 720-0896B (Home Depot)	$400	**73**	◓	●	○	◓	●		●	Electronic	
	8	**Kenmore** Elite 33586	$550	**72**	◓	◓	◓	◓	◓		●	Electronic	●
	9	**Landmann** 42172	$460	**71**	●	◓	○	◓	○	●		Electronic	
	10	**Char-Broil** Advantage 463344116 [Item #748080] (Lowe's)	$270	**71**	◓	●	◓	◓	○	●		Electronic	
	11	**Napoleon Legend** LA400 Series LA400RSIBPSS	$1,000	**71**	○	●	◓	●	◓		●	Rotary	●
	12	**Weber** Spirit E-320 46710001 Spirit E-310 46510001	$550	**70**	◓	◓	○	◓	●		●	Electronic	●
	13	**Member's Mark** Dual Lid 720-0839 (Sam's Club)	$500	**70**	◓	◓	◓	●	○	●		Rotary	
	14	**Weber** Genesis S-330 Genesis S-310	$970	**70**	●	◓	○	○	◓	●		Electronic	●
	15	**Char-Broil** Tru-Infrared 463336016 (Walmart)	$285	**69**	◓	◓	◓	●	○	●		Electronic	
	16	**Kenmore** 20125 [1]	$450	**69**	◓	●	◓	◓	○	●		Electronic	●
	17	**Hamilton Beach** Grill Station 84241 Grill Station 84242R, Grill Station 84244R	$400	**69**	◓	◓	◓	◓	○		●	Rotary	
	18	**Nexgrill** Evolution Infrared Plus 720-0882A (Home Depot)	$400	**69**	◓	◓	○	◓	◓	●		Electronic	
	19	**Napoleon** Mirage M485RSIB	$1,100	**68**	◓	●	○	◓	◓	●		Electronic	
	20	**Dyna-Glo** Premium DGA550SSP-D	$450	**68**	○	●	○	●	○	●		Electronic	
	21	**Better Homes and Gardens** BH16-101-099-02 (Walmart)	$270	**68**	○	●	◓	◓	○	●		Electronic	
	22	**Weber** Genesis E-330	$800	**67**	●	○	○	○	◓		●	Electronic	●

Scan any page in this section using the Blippar app to shop for grills and for videos on grilling, grill maintenance, and more *(see page 7 for details)*.

☑ CR Best Buy ☑ Recommended

● Excellent ◓ Very Good ○ Good ◒ Fair ● Poor

Recommended	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULTS					FEATURES			
					Evenness Performance	Preheat Performance	Temperature Range	Indirect Cooking	Convenience	Stainless-Steel Grates	Coated Cast-Iron Grates	Igniter Type	Burner Warranty (10 or More Years)
LARGE (ROOM FOR 28 OR MORE BURGERS)													
	1	**Kenmore** 16156 [2]	$600	**72**	◓	●	◓	◓	○	●		Electronic	●
☑	2	**Napoleon** Prestige Pro 665RSIB	$2,600	**72**	◓	○	●	●	○	●		Rotary	●
	3	**Kenmore** Elite 700 Series 3358	$1,400	**71**	●	○	◓	◓	◓	●		Electronic	●
	4	**Kenmore** PG-40611SOL	$300	**70**	◓	◓	◓	●	○		●	Electronic	
	5	**Char-Broil** Advantage 463240115 [Item #606674] (Lowe's)	$370	**69**	◓	◓	○	◓	○		●	Electronic	
	6	**Napoleon** Mirage M730RSBIPSS	$1,800	**68**	◓	●	○	●	○	●		Rotary	●
	7	**Weber** Summit E-670	$2,500	**68**	◓	◓	○	◓	●	●		Electronic	●
	8	**KitchenAid** 720-0893	$900	**67**	◓	◓	○	●	○	●		Rotary	●
	9	**KitchenAid** 720-0856	$600	**65**	◓	◓	○	●	○	●		Rotary	●
	10	**Broil King** Baron 590S 923584 [3]	$850	**65**	○	○	●	●	◓		●	Electronic	
SMALL (ROOM FOR 18 OR FEWER BURGERS)													
☑	1	**Huntington** 630124 630014	$140	**74**	◓	●	◓	◓	○			Push-Button	
☑	2	**Weber** Spirit E-220 46310001 Spirit E-210 46110001, Spirit S-210 46110001	$450	**71**	◓	◓	○	◓	●		●	Electronic	●
☑	3	**Broil-Mate** 165154	$200	**71**	◓	◓	●	◓	○		●	Electronic	
☑		**Huntington** 665154	$190	**71**	◓	◓	●	◓	○		●	Electronic	
	4	**Napoleon** Terrace SE325PK	$600	**68**	◓	◓	○	◓	○		●	Rotary	●
	5	**Fiesta** 24025	$140	**66**	◓	●	◓	○	◒			Push-Button	
	6	**Char-Broil** Commercial Tru-Infrared 463642316 [Item #748075] (Lowe's)	$300	**65**	◓	○	◓	◓	◓		●	Electronic	●
	7	**Backyard Grill** BY16-101-002-05 (Walmart)	$130	**64**	◓	●	◒	◓	○			Rotary	
	8	**Beefeater** Discovery Plus 4 Burners	$1,250	**64**	○	◓	○	◓	○		●	Rotary	
	9	**Member's Mark** Patio Grill GR2001402-MM (Sam's Club)	$200	**63**	●	◓	○	○	○		●	Electronic	
	10	**Master Cook** SRGG61401	$600	**63**	○	◓	○	◓	○		●	Rotary	
PORTABLE													
	1	**Cuisinart** CGG-306	$200	**67**	◓	●	◒	○	NA	●		Rotary	
	2	**Weber** Q 2200 54060001	$250	**60**	◓	○	○	NA	NA		●	Electronic	
	3	**Cuisinart** CGG-200	$180	**54**	○	◓	○	NA	NA		●	Rotary	
	4	**Weber** Q 1000 50060001	$170	**48**	○	○	◒	NA	NA		●	Push-Button	
	5	**Char-Broil** Tru-Infrared Grill2Go X200 12401734	$110	**45**	○	●	●	NA	NA	●		Push-Button	
	6	**North American Outdoors** BB12919G	$140	**36**	◒	○	◒	NA	NA		●	Push-Button	

[1] Similar to the tested Kenmore 23683, now discontinued. [2] Similar to the tested Kenmore 16136, now discontinued.
[3] Similar to the tested Broil King Baron 590 963584, now discontinued.

INSECT REPELLENTS IN THE AGE OF ZIKA

Our new tests identify what works and what doesn't against the bugs that can spread the virus and other serious diseases

BY JENEEN INTERLANDI

Repel Lemon Eucalyptus (30%) *$7.50*

This is the only plant-oil-based repellent that scored among the top three products in our tests. The other two top-scoring repellents were Sawyer Picaridin 20% (score: 96) and Ben's 30% Deet Tick & Insect Wilderness Formula (score: 93).
RATING 87

PROP STYLING: MEGUMI EMOTO

Scan this page using the Blippar app for a video on the insect repellents that protect against Zika *(see page 7 for details).*

PHOTOGRAPH BY JAMIE CHUNG

SINCE EMERGING IN BRAZIL in early 2015, the Zika virus has now spread to more than 40 countries in the Western Hemisphere. It's a troubling and widespread global outbreak—and it's the first of its kind. If you live on the mainland U.S., health officials say you probably don't need to panic. But you should still be alert to the threat and take some extra precautions this summer.

The virus can cause microcephaly, a birth defect marked by an abnormally small head and developmental deficits. Doctors still don't know how often the virus causes those problems, but they say Zika is the first pathogen in 50 years to trigger birth defects, and the first mosquito-borne disease ever to do so.

We've seen microcephaly before, notably during the rubella epidemic of 1964. But the Zika-related version is so much worse that doctors have started referring to it by a different name altogether: fetal brain disruption sequence.

"I have never seen anything like this," says James Sejvar, M.D., a neuroepidemiologist with the Centers for Disease Control and Prevention. Babies born with Zika-related microcephaly have significantly smaller heads than those born with other forms of the disorder, he says. And their brains are much more damaged.

The virus can also spread through sexual intercourse and has, in rare cases, been linked to serious neurological disorders in adults, including Guillain-Barré syndrome, which can cause paralysis, sometimes permanently.

Zika isn't the only bug-borne threat this summer. Dengue is now common in Puerto Rico and the U.S. Virgin Islands, and sporadic outbreaks have been reported in Florida, Hawaii, and Texas. West Nile virus still infects thousands each year and has caused 1,700 deaths in the U.S. since 1999. And tick-borne illnesses such as Lyme and Rocky Mountain spotted fever are increasing in incidence and geographic range.

But it's Zika that has filled health officials with dread and sent them scrambling to update mosquito-control protocols. Because anyone bitten can become an unwitting carrier of the disease, even those not trying to become pregnant need to be vigilant against mosquito bites this season.

Ridding yards of standing water will deprive mosquitoes of their breeding grounds, and not letting grass grow too high will help keep ticks at bay. Choosing the right insect repellent will prevent bites when other precautions fail.

Consumer Reports tested products to see which work best against the Aedes mosquitoes that spread Zika as well as against Culex mosquitoes, which spread West Nile, and the ticks that carry Lyme. Here's what we found:

The Best Repellents

We looked at 16 repellents with a range of active ingredients, including conventional chemicals like deet, synthetic plantlike compounds that resemble those found in nature, and plant oils like citronella and rosemary.

Three insect repellents qualified as Consumer Reports Top Picks: Sawyer Picaridin (20%), Ben's 30% Deet Tick & Insect Wilderness Formula, and Repel Lemon Eucalyptus (30%). Once applied, they were able to ward off Aedes and Culex mosquitoes, plus ticks, for at least 7 hours.

Most products performed equally against both species, but some didn't work as well against the Zika-carrying Aedes mosquitoes as they did against others. For example, Repel Scented Family and Skin-So-Soft Bug Guard warded off Culex mosquitoes for 8 hours but stopped Aedes mosquitoes for only 5 and 3 hours, respectively.

We also found that when choosing a repellent, it's important to look at more than just the ingredients. For example, our top-rated product contains picaridin, but so does the one that came in second to last. That's probably due in part to different concentrations. The high-scoring product is 20 percent picaridin; the low-scoring one, just 5 percent. But higher concentrations aren't always better. A 15 percent deet product outperformed one with 25 percent deet against deer ticks, maybe because of its "inactive" ingredients.

WHAT YOU NEED TO KNOW ABOUT ZIKA

As mosquito season peaks, researchers are racing to answer many questions about Zika. Why do some people who are bitten develop symptoms but not others? If a pregnant woman is infected, what's the likelihood that she'll pass the virus to her fetus? Are Zika-infected babies born without microcephaly at risk for other developmental delays later in life? Here are some things we do know:

Local transmission—when mosquitoes are infected and spread the disease—is already a reality in Puerto Rico, the U.S. Virgin Islands, and American Samoa. Experts don't anticipate an epidemic on the U.S. mainland, but they do expect local outbreaks, especially in poorer communities and along the Gulf Coast. The scope of those outbreaks will depend on how contagious the disease proves to be, how fast people develop immunity to it, and how swiftly mosquito-control measures are put in place.

The Centers for Disease Control and Prevention advises women of childbearing age to avoid Zika-affected countries if they can. They should also take several precautions if they must travel there or if they live in an affected area.

Zika can be transmitted sexually, so if you're pregnant, use condoms every time for all forms of sex, or consider abstaining for the duration of the pregnancy. If you're hoping to conceive, wait eight weeks (six months for men) after possible exposure before having unprotected sex.

If you go to a Zika hot spot, use repellent for at least three weeks after returning to prevent local mosquitoes from picking up the virus from you and passing it on.

ILLUSTRATIONS BY MICHAEL BRANDON MYERS

KEEP BUGS AT BAY

Effective bug avoidance requires more than repellent.

YOUR CLOTHES Wear socks with close-toed shoes; loose, long sleeves and pants (mosquitoes can bite through tight clothes), and avoid dark colors (light-colored clothes make it easier to spot ticks). Tuck your shirt into your pants and pants into your socks. Shower when you get home, then inspect your skin and use tweezers to remove ticks. For extra safety, toss clothes into a dryer on high heat to kill stragglers.

YOUR HOUSE Make sure door and window screens are hole-free. Use an air conditioner or fan if you can.

YOUR DECK Our tests last year of two area repellents—citronella candles and a battery-powered diffuser that blows out geraniol—showed they were ineffective at keeping mosquitoes away. But an oscillating pedestal fan on high cut mosquito landings by 45 to 65 percent, at least among people close to it.

YOUR YARD To prevent mosquitoes from breeding, clear ivy and leaves, and keep water from pooling in gutters, tires, wheelbarrows, wading pools, and swimming pool covers. Ticks prefer tall grass and shade, so keep your lawn mowed, remove leaves and debris, and let as much sun into your yard as possible. Consider fencing your property to keep out deer and other animals that carry ticks. And check your cats and dogs for ticks, and use repellents approved for pets.

MOSQUITO-BORNE DISEASES

CHIKUNGUNYA

How Common? No local cases on U.S. mainland in 2015; 202 cases in U.S. territories.
Where? Puerto Rico and the U.S. Virgin Islands.
Symptoms? Fever, headache, and joint pain three to seven days after a bite.
Serious Effects? Usually only in people with other health problems, such as diabetes or heart disease.
Treatment? None. Acetaminophen and fluids to ease symptoms; no aspirin or related drugs such as ibuprofen.

DENGUE

How Common? 211 local cases in 2015; 46 cases in U.S. territories.
Where? Florida, Hawaii, Puerto Rico, and the U.S. Virgin Islands.
Symptoms? Fever, rash, and severe eye, bone, joint, and muscle pain four to seven days after a bite.
Serious Effects? Severe damage to the body's blood vessels leading to bleeding and sometimes death.
Treatment? None. Acetaminophen and fluids to ease symptoms; no aspirin or related drugs such as ibuprofen.

WEST NILE

How Common? 2,060 local cases in 2015.
Where? Every state except Alaska and Hawaii.
Symptoms? Fat, red rash with small bumps two to 14 days after a bite, followed by headache, fatigue, and back pain.
Serious Effects? In rare cases, inflammation of the brain or surrounding tissue, which can be fatal.
Treatment? None. To ease symptoms, fluids and over-the-counter pain relievers such as aspirin, ibuprofen, or naproxen.

ZIKA

How Common? No local cases on the U.S. mainland as of May 2016; 596 cases in U.S. territories.
Where? Puerto Rico, American Samoa, the U.S. Virgin Islands. Outbreaks expected in summer, especially in Gulf Coast states.
Symptoms? Fever, rash, joint pain, and pinkeye two to 14 days after a bite.
Serious Effects? Birth defects and developmental delays; in adults, Guillain-Barré.
Treatment? None. Acetaminophen and fluids; no aspirin or related drugs.

TICK-BORNE DISEASES

BABESIOSIS

How Common? 1,759 cases in 2014.
Where? Mostly in the Northeast and upper Midwest.
Symptoms? Fever, chills, headache, body aches, and loss of appetite one to six weeks after a bite.
Serious Effects? Blood clots and severe anemia, sometimes fatal.
Treatment? The antibiotic azithromycin plus the antiparasitic atovaquone or, in severe cases, the antibiotic clindamycin plus quinine.

EHRLICHIOSIS/ ANAPLASMOSIS

How Common? 4,488 cases in 2014.
Where? Mostly in the Southeast and South Central (ehrlichiosis), and the Northeast and upper Midwest (anaplasmosis).
Symptoms? High fever and severe headache, fatigue, and muscle aches seven to 14 days after a bite.
Serious Effects? In rare cases, difficulty breathing, bleeding disorders, and death.
Treatment? The antibiotic doxycycline as soon as symptoms appear.

LYME

How Common? About 300,000 cases in 2015.
Where? Mostly in the Northeast and upper Midwest.
Symptoms? "Bulls-eye" rash with fatigue, chills, fever, headache, and muscle and joint pain three to 30 days after a bite.
Serious Effects? In rare cases, lasting joint pain, neurologic damage, facial paralysis, or heart damage.
Treatment? Antibiotics (usually doxycycline or amoxicillin) as soon as symptoms appear.

ROCKY MOUNTAIN SPOTTED FEVER

How Common? 3,647 cases in 2014.
Where? Mostly in Arkansas, Missouri, North Carolina, Oklahoma, and Tennessee.
Symptoms? Fever, headache, stomach pain, vomiting, muscle pain, and rash two to 14 days after a bite.
Serious Effects? Heart damage, kidney failure, and if not treated within five days, sometimes death.
Treatment? Doxycycline as soon as symptoms appear.

Note: All cases are for infections from insect bites in the U.S., not while traveling abroad or from sexual transmission. Mosquito-borne diseases other than Zika are those reported to the Centers for Disease Control and Prevention for 2015; Zika cases are those reported as of May 2016. Tick-borne cases other than Lyme are for 2014; Lyme cases are estimates from the CDC. The CDC says that for all diseases, reported cases are probably less than the actual number.

Scan this page using the Blippar app for a video on the insect repellents that protect against Zika *(see page 7 for details)*.

RATINGS: Insect Repellents That Battle Disease-Carrying Bugs

Of the 16 repellents we tested, those with 20 percent picaridin, 30 percent oil of lemon eucalyptus, or 15 to 30 percent deet worked best. We don't recommend repellents above 30 percent deet because they may pose greater risks, and lower concentrations can provide excellent protection.

☑ CR Best Buy ☑ Recommended

● Excellent ◓ Very Good ○ Good ◒ Fair ● Poor

Recommended	Rank	PRODUCT	PRICE	Cost Per Oz. ($)	SCORE	Effectiveness, Aedes Mosquitoes (Hrs.)	Effectiveness, Culex Mosquitoes (Hrs.)	Effectiveness, Deer Ticks (Hrs.)	Avoids Damage to Materials	Active Ingredients	Type
☑	1	**Sawyer** Picaridin	$8.25	$2.06	**96**	8	8	8.5	○	Picaridin 20%	Pump Spray
☑	2	**Ben's** 30% Deet Tick & Insect Wilderness Formula	$8	$1.33	**93**	7.5	8	8.5	○	Deet 30%	Aerosol
☑	3	**Repel** Lemon Eucalyptus	$7.50	$1.88	**87**	7	8	7	●	Oil of lemon eucalyptus 30% (Approx. 65% p-menthane-3,8-diol)	Pump Spray
☑	4	**Repel** Scented Family	$7	$1.08	**82**	5	8	8.5	○	Deet 15%	Aerosol
☑	5	**Natrapel** 8 Hour	$9	$1.50	**81**	8	8	6	○	Picaridin 20%	Aerosol
☑	6	**Off** Deepwoods VIII	$6.50	$1.63	**74**	8	8	5	○	Deet 25%	Aerosol
	7	**Coleman** SkinSmart	$8	$1.33	**69**	3	6	8	○	3-(N-Butyl-acetyl)-amino propionic acid ethyl ester IR3535 20%	Aerosol
	8	**Avon** Skin-So-Soft Bug Guard plus Picaridin	$14	$3.50	**62**	3	8	7	○	Picaridin 10%	Pump Spray
	9	**Cutter** Skinsations	$4.50	$0.75	**33**	1	3	6	○	Deet 7%	Pump Spray
	10	**HOMS** Bite Blocker BioUD Mini Trigger	$8.95	$1.49	**31**	3	3.5	3	◓	2-Undecanone (CAS # 112-12-9) 7.75%	Pump Spray
	11	**Cutter** Natural	$5	$0.83	**29**	1.5	.5	8	◓	Geraniol 5%, soybean oil 2%, sodium lauryl sulfate 0.4%, potassium sorbate 0.1%	Pump Spray
	12	**Burt's Bees** Herbal	$8	$2	**28**	1	1.5	6	●	Castor oil 10%, rosemary oil 3.77%, lemongrass oil 2.83%, cedar oil 0.94%, peppermint oil 0.76%, citronella oil 0.57%, clove oil 0.38%, geranium oil 0.19%	Pump Spray
	13	**All Terrain** Kids Herbal Armor	$10	$2.50	**23**	.5	1	6.5	○	Oil of soybean 11.5%, oil of citronella 10%, oil of peppermint 2%, oil of cedar 1.5%, oil of lemongrass 1%, oil of geranium 0.05%	Pump Spray
	14	**California Baby** Natural Bug Blend	$15.80	$2.43	**22**	.5	.5	7	●	Pure essential oils of cymbopogon nardus (citronella) 5%, cymbopogon schoenanthus (lemongrass) 0.5%, cedrus atlantica (cedar) 0.5%	Pump Spray
	15	**Off** FamilyCare II Clean Feel	$6	$1	**18**	.5	1	5	◓	Picaridin 5%	Pump Spray
	16	**EcoSmart** Organic	$7	$1.17	**7**	.5	.5	1.5	●	Geraniol 1.0%, rosemary oil 0.5%, cinnamon oil 0.5%, lemongrass oil 0.5%	Pump Spray

DO 'NATURAL' REPELLENTS WORK?

Many of them don't, so choose carefully.

It might seem like a good idea, especially if you're pregnant or hoping to be: Choose a "natural" bug repellent. But five of the six plant-oil-based repellents we tested lasted an hour or less against Aedes mosquitoes, the kind than can spread Zika.

The exception was **Repel Lemon Eucalyptus (30%),** which warded off Aedes mosquitoes for 7 hours. Several other repellents also did well and are safe for pregnant women: those with 20 percent picaridin (a synthetic compound resembling a chemical in the black pepper plant) and those with 15 to 30 percent deet.

But even those products can cause side effects, especially if you apply too much or too often. For example, they can all cause rashes and skin irritation, and deet may cause disorientation.

So use all repellents with care. Apply just enough to cover exposed skin. Don't use it on wounds or broken skin, or under clothes. For your face, spray it on your palms, then rub it in, avoiding your eyes and mouth. Adults should put it on children.

DON'T MISS A BEAT

With the right speakers and headphones, you can move the party outdoors—come rain or shine. And to put together the perfect playlist, check out our guide to the best music streaming services.

BY TERRY SULLIVAN

THE WAY WE LISTEN to music is changing at, well, the speed of sound.

Only about a decade ago, most of us were still buying CDs that we played on home sound systems rigged together by a snake of wires that we tucked out of view behind our entertainment centers.

Today, CDs are going the way of LPs, replaced by music that's downloaded or streamed (often to our smartphones), giving us almost unlimited choices at home, in the car, or wherever else we go.

Even our audio equipment is shedding its ties, relying more on Wi-Fi and Bluetooth connections than cumbersome cords. According to the Consumer Technology Association, sales of wireless speakers rose almost 40 percent in 2015.

Amazon introduced what turned out to be a game changer last year with its cloud-connected Echo. It comes with a built-in personal assistant named Alexa, a sort of genie-in-a-speaker that can read you a recipe, relay a weather report, and play any song from your Prime or Spotify list, whether it's "Can't Feel My Face" by The Weeknd or "Sunny Afternoon" by the Kinks.

Wireless headphones are growing in popularity as well, in part because of new features like rugged and water-resistant designs.

On the following pages you'll find our recommendations for the best headphones and wireless speakers for home and away. We even provide a playlist to use when you're shopping for audio components, and a critical look at some of the most popular streaming music services. It's everything you'll need to start your summer off on a high note.

1 | Jabra Solemate MAX wireless speaker *$300*

This rugged, weatherproof Bluetooth speaker comes with a convenient handle and a hidden audio cord for old-school connections. It also offers easy, one-touch pairing and good sound quality, whether you're playing music or watching movies under the stars.
RATING 60

Scan any page in this section using the Blippar app to see our buying guides—and to shop—for headphones, wireless speakers, and more *(see page 7 for details).*

PHOTOGRAPHS BY JAMIE CHUNG

2 | UE Megaboom wireless speaker *$300*

In addition to basic black, this artfully designed stereo speaker comes in red, blue, and plum—making it easy to spot amid your other gear. It delivers good sound quality and pairs easily with a smartphone, tablet, or laptop via Bluetooth. The manufacturer says it's waterproof, so feel free to bring it with you on that next whitewater rafting trip.
RATING 57

3 | Scosche SportClip 3 headphones *$30*

If you want very good sound at a very nice price, look no further. Billed as splashproof and dustproof, these headphones have ear hooks to hold them firmly in place, even when you're pounding down a trail on your mountain bike. It's a small detail, but we like the carrying bag, too, which keeps the wires from getting tangled up in your backpack.
RATING 76

ON THE GO

1 | Definitive Technology Symphony 1 Executive headphones *$400*

Noise-canceling tech and an over-the-ear design make these wireless headphones excellent at blocking out the world beyond your airplane seat. The very good sound quality they deliver is one more reason you'll want to pack them.
RATING 74

2 | Bose SoundLink Color wireless speaker *$130*

This compact speaker is a great buy. Available in five cheerful colors, it stows easily and delivers good sound quality for up to 8 hours on a charge. It also packs a punch powerful enough to fill a beachside cabana with a summer soundtrack.
RATING 60

3 | Libratone Zipp Mini wireless speaker *$250*

This speaker delivers good sound in a great many ways. Unlike other portable models that connect only to a music source via Bluetooth, the Zipp Mini lets you use Wi-Fi for a stronger signal. It also offers iPod docking and analog audio inputs. And if you tire of the cover, six more options are available.
RATING 53

4 | Phiaton BT 100 NC headphones *$100*

The collar on these headphones conceals Bluetooth technology that lets you pair the unit wirelessly with a mobile device. That means no more getting tangled up in wires. And the noise-canceling technology comes in handy when the couple with the toddler boards your cross-country flight and sits across the aisle.
RATING 69

PROP STYLING: MEGUMI EMOTO

Scan any page in this section using the Blippar app to see our buying guides—and to shop—for headphones, wireless speakers, and more *(see page 7 for details).*

FULL STREAM AHEAD

Music services like Spotify and Tidal make millions of songs from every musical genre instantly available–free or for a small subscription fee. How is a domestic DJ to choose? Here's a guide to the major players.

APPLE MUSIC

COST: Free three-month trial; $10/month.

BEST FOR: Music on the go.

WHAT WE LIKE: Apple's service, with 30 million songs (available on iOS and Android devices), is a good choice if you're a frequent traveler. It lets you download songs to fill those seemingly endless hours between Wi-Fi hot spots. It also offers exclusive content from artists like Taylor Swift, Beats 1 radio (curated by real DJs), and Apple radio, as well as Siri's voice commands, and videos and music uploaded from your personal library.

WHAT WE DON'T LIKE: Oddly enough, the app design and navigation tools are less intuitive than we would expect from Apple.

PANDORA

COST: Free with ads or $5/month ad-free.

BEST FOR: Listening to your favorite artists and discovering new ones.

WHAT WE LIKE: It's like having a personal DJ. Tell Pandora the artist you want to hear and it creates a channel with selections from that artist and others with similar styles. It's a terrific way to be introduced to new music from the service's 1.5-million title library.

WHAT WE DON'T LIKE: You can't use Pandora to choose specific songs by an artist, upload your own tunes, create playlists, or listen to music offline.

PRIME MUSIC

COST: Free to Amazon Prime members ($99/year).

BEST FOR: Those Amazon Prime members.

WHAT WE LIKE: This ad-free, on-demand service lets you listen to audio books purchased from Amazon's Audible service. When paired with Amazon's Echo, you can summon songs with a voice command. ("Alexa, play the Rolling Stones' 'Tumbling Dice.' ") Best of all, it's included with a Prime subscription.

WHAT WE DON'T LIKE: With about 1 million songs in its catalog, it has a thinner selection of music and audiobooks than some competing services.

SLACKER

COST: Free one-month trial; $4 or $8/month.

BEST FOR: Curated and on-demand music.

WHAT WE LIKE: The extensive library and easy-to-use interface let you create tailor-made stations of your favorite music. There are also more than 300 expert-curated stations devoted to specific musical genres, sports, news, and weather. The pricier plan grants you offline listening and personal playlists as well.

WHAT WE DON'T LIKE: Slacker's free service gives you less say in the selection of songs, though you can skip past the duds a limited number of times.

SPOTIFY

COST: Free with ads or $10/month ad-free.

BEST FOR: Anyone looking for a versatile service with a large catalog of titles.

WHAT WE LIKE: With a library of more than 30 million songs and easy access via most digital platforms, Spotify is popular for good reason. It's a great place to find favorite artists, create and share playlists, and enjoy exclusive live sessions. You also get better sound quality with the paid plan.

WHAT WE DON'T LIKE: You can't listen to Prince's "Purple Rain." (But hey, it's only available on Tidal.) Spotify doesn't offer music videos, either.

TIDAL

COST: Free one-week trial; $10/month ($20/month for hi-fi).

BEST FOR: High-quality audio and offline listening.

WHAT WE LIKE: It has CD-quality sound, HD music videos, and excellent app compatibility with Denon, Sonos, and other multiroom speaker models.

WHAT WE DON'T LIKE: $20 per month is steep even for most audio snobs, those high-quality audio files can quickly devour small cellular data plans, and though its rap and R&B offerings are comprehensive, the rest of its catalog can be spotty compared with some competitors.

TESTING INSIGHTS

5 SONGS THAT REVEAL A SPEAKER'S STRENGTHS

It takes more than a good set of ears to identify great headphones and speakers. The pros in our testing labs shared some musical tracks to use when looking for the qualities found in top-notch equipment.

"WHOLE LOTTA LOVE"

by Led Zeppelin, from "The Best of Led Zeppelin, Volume 1."

On excellent equipment, you'll notice the echo throughout the song that most people never hear; the whirring sound midway through the track seems to swirl around you.

"THE WAY I AM"

by Ingrid Michaelson, from "Girls and Boys."

In this arrangement, you should be able to hear the sound of fingers moving along strings, the singer's breath between lines, and even her lips opening and closing as she forms words.

"TRAVELIN' LIGHT"

by Diane Schuur, from "Diane Schuur and the Count Basie Orchestra."

Listen carefully to this live recording and you can actually hear the vocals and the horns resound off the walls of the performance space.

"RV315 L'ESTATE ILL TEMPO IMPETUOSO D'ESTATE (SUMMER IN G)"

by Fabio Biondi, Europa Galant on "Le Quattro Stagioni (Vivaldi–The Four Seasons)."

The strings in this Vivaldi piece are being played at breakneck speed, but on quality equipment, each note will be distinct. On average equipment, the sound will be somewhat slurred.

"SIN WAGON"

by Dixie Chicks, from "Fly."

On better equipment, the guitar, fiddle, and cymbals in this busy arrangement will each be easy to hear. On lesser models, each instrument will lack definition.

ILLUSTRATION BY MICHAEL BRANDON MYERS

1 | Sonos Play:5 (2015) wireless speaker *$500*

Easy to use, this Sonos can be linked to a wireless, multiroom sound system and to a Sonos 5.1-channel surround-sound system in your home theater. On its own, it delivers very good sound. Pair it with a second Play:5 and the quality bumps right up to excellent.
RATING 73

2 | Marshall Kilburn wireless speaker *$300*

Guitar players may recognize this speaker's design, inspired by the company's renowned line of amps. The Kilburn produces good sound and gets high marks for simplicity. It has two buttons to help with Bluetooth pairing and audio-source selection, and the three knobs on top (for bass, treble, and volume) have a satisfying tactile feel.
RATING 60

3 | Grado Prestige SR325e headphones *$295*

Because of the retro look, this model has a certain hipster appeal. Don't let that distract you from the real virtue, though—the sound. We're not talking good quality; we're talking excellent. And just in case you get swept away by the music, the open-air design of the earpieces allows you to hear the doorbell when the dinner guests arrive.
RATING 91

4 | Sony SRS-X55 wireless speaker *$180*

As a basic black box it might lack pizzazz, but this compact, Bluetooth-compatible speaker produces good sound quality and has touch controls that are large and easy to spot. We also like the fact that the source selector is conveniently located on top of the unit, the speaker has analog audio inputs, and the whole package comes at a very nice price.
RATING 60

Scan any page in this section using the Blippar app to see our buying guides—and to shop—for headphones, wireless speakers, and more *(see page 7 for details)*.

5 | 1MORE E1001 Triple Driver headphones *$100*

Our techs were pleasantly surprised by these small, sleek earphones. Unlike most portable models, they deliver excellent sound with an earpluglike design that limits extraneous noise. They also come with nine pairs of earpieces to help you find just the right fit.
RATING 86

SPEAKERS YOU CAN BOSS AROUND

As speakers go, the Amazon Echo is a middle-of-the road performer. It's easy to use and the sound is good, but beyond that, we couldn't find much to recommend it to the music fans who monitor our Ratings. Yet according to the research firm 1010data, it now commands almost 25 percent of the wireless-speaker market.

How can that be? Well, the Echo is a lot more than a speaker. It comes with Amazon's voice-activated digital assistant, Alexa, which can turn up the heat in your home, summon a car service, add items to your grocery list, relay last night's baseball scores, order a pizza, and even entertain the kids with jokes. Some people may feel uncomfortable revealing so much info to the world's biggest retailer, but many love the convenience the Echo affords. John MacFarlane, CEO of the popular speaker manufacturer Sonos, calls it "the first product to really showcase the power of voice control in the home."

And because the Echo's platform is open to third-party developers, it adds new "skills" every week compliments of popular services like Nest, StubHub, and Uber. In addition to Amazon's Prime Music, it supports Spotify, Pandora, and other streaming services.

This spring Amazon expanded the Echo's reach with two new options. Much like the Echo, the *$130* Tap moves comfortably from room to room, but it can also go with you to the beach thanks to a rechargeable battery that reportedly lasts up to 9 hours. To preserve that power, you have to tap the microphone button to activate Alexa, which is far less fun than just telling the device to turn off the lights or open the garage door. Another downer? The sound is just fair.

For those who won't give up the superior audio quality of, say, a Sonos speaker for Alexa's bag of tricks, the *$90* hockey-puck-shaped Echo Dot lets you add Amazon's voice-activated assistant to the speaker of your choice via Bluetooth or audio cable. We really like the sound of that.

RATINGS: The Best of Studio-Style and Wireless Speakers and Headphones

☑ CR Best Buy ☑ Recommended

Better ◀——▶ Worse

Rec.	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULT: Sound Quality	FEATURES: Type	FEATURES: Design
A.		**HOME/STUDIO-STYLE STEREO HEADPHONES**					
☑	1	**Grado** Prestige SR325e	$295	**91**	●	Over Ear with Headband	Open Air
☑	2	**Grado** Prestige SR225e	$200	**88**	●	Over Ear with Headband	Open Air
☑	3	**HiFiMan** HE-400i	$500	**88**	●	Over Ear with Headband	Open Air
☑	4	**HiFiMan** HE-400S	$300	**88**	●	Over Ear with Headband	Open Air
☑	5	**Bowers & Wilkins** P7	$400	**86**	●	Over Ear with Headband	Closed
☑	6	**Grado** Prestige SR80e	$100	**86**	●	On Ear with Headband	Open Air
☑	7	**Oppo** PM-3	$400	**86**	●	Over Ear with Headband	Closed
B.		**PORTABLE STEREO HEADPHONES**					
☑	1	**1MORE** E1001 Triple Driver	$100	**86**	●	Ear Insert	Isolating
☑	2	**PSB** Speakers M4U 4	$300	**86**	●	Ear Insert	Isolating
☑	3	**Klipsch** Image X11i	$235	**80**	◓	Ear Insert	Isolating
☑	4	**Klipsch** X12i	$350	**80**	◓	Ear Insert	Isolating
☑	5	**Westone** ADV Alpha	$150	**80**	◓	Ear Insert with Ear Hooks	Isolating
☑	6	**AKG** by Harman Y23	$40	**76**	◓	Ear Insert	Isolating
☑	7	**Scosche** SportClip 3	$30	**76**	◓	Ear Insert with Ear Hooks	Isolating
C.		**WIRELESS HOME/STUDIO-STYLE STEREO HEADPHONES**					
☑	1	**Sony** MDR-1ABT	$400	**76**	◓	Over Ear with Headband	Closed
☑	2	**AKG** by Harman K845BT	$300	**71**	◓	Over Ear with Headband	Closed
☑	3	**Bose** SoundLink around-ear headphones II	$280	**71**	◓	Over Ear with Headband	Closed
☑	4	**Bowers & Wilkins** P5 Wireless	$400	**71**	◓	On Ear with Headband	Closed
☑	5	**Pendulumic** Stance S1+	$200	**71**	◓	Over Ear with Headband	Closed
D.		**WIRELESS PORTABLE STEREO HEADPHONES**					
☑	1	**beats** by dre powerbeats 2 wireless	$150	**76**	◓	Ear Insert with Ear Hooks	Nonisolating
☑	2	**SOL** Republic Shadow Wireless	$80	**76**	◓	Ear Insert with Open-Front Neck Collar	Isolating
☑	3	**Jabra** Sport Coach Wireless	$150	**71**	◓	Ear Insert with Ear-Bowl Supports	Isolating
☑	4	**Jabra** Sport Pulse Wireless	$200	**71**	◓	Ear Insert with Ear-Bowl Supports	Isolating
☑	5	**JBL** by Harman J46BT	$80	**71**	◓	Ear Insert with Ear-Bowl Supports	Isolating
☑	6	**Klipsch** R6 BT	$150	**71**	◓	Ear Insert with Ear Hooks	Isolating
☑	7	**Monster** Adidas Sport Adistar	$100	**71**	◓	Ear Insert with Ear-Bowl Supports	Isolating
☑	8	**SOUL** Electronics Run Free Pro	$130	**71**	◓	Ear Insert with Ear-Bowl Supports	Isolating
E.		**HOME/STUDIO-STYLE NOISE-CANCELING HEADPHONES**					
☑	1	**Bose** QuietComfort 25	$300	**75**	◓	Over Ear with Headband	Closed
☑	2	**PSB** Speakers M4U 2	$400	**73**	◓	Over Ear with Headband	Closed
F.		**PORTABLE NOISE-CANCELING HEADPHONES**					
☑	1	**Bose** QuietComfort 20i	$300	**74**	◓	Ear Insert with Ear-Bowl Support Earpieces	Isolating

How we test The score for headphones is based on sound quality and, for noise-canceling headphones, effectiveness of ambient noise reduction. The score for wireless speakers is based mainly on sound quality, with ease of use and versatility factored in. The displayed score for both is out of a total of 100 points.

Scan any page in this section using the Blippar app to see our buying guides—and to shop—for headphones, wireless speakers, and more *(see page 7 for details).*

Rec.	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULT	FEATURES	
					Sound Quality	Type	Design
G.	**WIRELESS HOME/STUDIO-STYLE NOISE-CANCELING HEADPHONES**						
☑	2	**Definitive** Technology Symphony 1 Executive	$400	**74**	◓	Over Ear with Headband	Closed
☑	3	**beats** by dre Studio Wireless	$330	**72**	◓	Over Ear with Headband	Closed
☑	4	**Parrot** Zik 3	$400	**69**	◓	Over Ear with Headband	Closed
H.	**WIRELESS PORTABLE NOISE-CANCELING HEADPHONES**						
☑	1	**Phiaton** BT220 NC	$160	**76**	●	Ear Insert	Isolating
☑	2	**Phiaton** BT 100 NC	$100	**69**	◓	Ear Insert with Open-Front Neck Collar	Isolating

Rec.	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULTS			
					Sound Quality	Ease of Use	Versatility	Wireless Type
A.	**HOME WIRELESS SPEAKERS**							
☑	1	**Sonos** Play:5 (2015)	$500	**73**	◓	○	◓	Wi-Fi
☑	2	**Edifier** R2000DB	$250	**73**	◓	◓	○	Bluetooth
☑	3	**Sony** SRS-X9	$500	**70**	◓	○	◓	Wi-Fi, Bluetooth
☑	4	**Sonos** Play:3	$300	**67**	◓	◓	○	Wi-Fi
☑	5	**Wren** Sound V5US	$500	**64**	◓	◓	◓	Wi-Fi, Bluetooth
☑	6	**Sonos** Play:1	$200	**63**	◓	◓	○	Wi-Fi
☑	7	**Fluance** Fi50	$200	**61**	◓	◓	○	Bluetooth
☑	8	**Paradigm** PW 600	$600	**61**	◓	○	◓	Wi-Fi
☑	9	**Denon** HEOS 5	$400	**61**	◓	○	◓	Wi-Fi
☑	10	**Edifier** E30 Spinnaker Bluetooth Speaker System	$300	**61**	◓	○	○	Bluetooth
B.	**PORTABLE WIRELESS SPEAKERS**							
☑	1	**Marshall** Kilburn	$300	**60**	○	●	◓	Bluetooth
☑	2	**Sony** SRS-X77	$250	**60**	○	○	●	Wi-Fi, Bluetooth
☑	3	**Jabra** Solemate MAX	$300	**60**	○	◓	○	Bluetooth
☑	4	**Denon** HEOS 1 w/ Go Pack	$300	**60**	○	◓	●	Wi-Fi, Bluetooth
☑	5	**Sony** SRS-X55	$180	**60**	○	◓	◓	Bluetooth
☑	6	**Sony** SRS-X7	$200	**60**	○	○	●	Wi-Fi, Bluetooth
☑	7	**Libratone** Zipp (Wi-Fi/BT 4.0)	$320	**60**	○	○	◓	Wi-Fi, Bluetooth
☑	8	**Bose** SoundLink Color	$130	**60**	○	●	○	Bluetooth
☑	9	**Riva** S	$250	**58**	○	◓	◓	Bluetooth
☑	10	**Riva** Turbo X	$350	**58**	○	◓	◓	Bluetooth
☑	11	**Harman** Kardon Onyx	$500	**57**	○	○	●	Wi-Fi, Bluetooth
☑	12	**UE** Megaboom	$300	**57**	○	○	◓	Bluetooth
☑	13	**Stelle** Audio Couture Audio Pillar	$300	**57**	○	○	◓	Bluetooth
☑	14	**JBL** Pulse 2	$200	**54**	○	◓	○	Bluetooth
☑	15	**Libratone** Zipp Mini	$250	**53**	○	○	●	Wi-Fi, Bluetooth
☑	16	**JBL** Xtreme	$300	**53**	○	○	◓	Bluetooth

A NEW VISION OF TRUE HEALTH

BY LEANA S. WEN, M.D.

IMAGINE THIS: It's the year 2066. You have abdominal pain. Fifty years ago, in 2016, you would have called your doctor and been told that you can't be seen that day. You'd be sent to the emergency room to wait an entire afternoon to get your blood drawn. You might even have been told to stay overnight for monitoring. That was then. But now doctors come to you, when it's good for your schedule, not theirs. You can choose for the doctor to come to your home in person or through an on-demand, virtual reality visit. If you do need blood tests, you get them done at home through a device that never breaks your skin. Hospitals exist only for true emergencies and intensive care; otherwise, you are treated and monitored for your recovery in the comfort of your own bedroom. If you need a specialist, that doctor will come to you. Your care team has as its center an advocate, someone who organizes all of your care–not only doctors' visits but also nutrition services and social needs.

You write up your own medical record, with your doctor's help. In real time, you and your care team agree on your treatment plan. You cannot believe there was a time when patients' own medical records were very difficult for them to access, or when doctors didn't disclose mistakes to patients. Humans will always make mistakes; now they are openly discussed and remediated, and malpractice suits and payments are relics of the past.

Many diseases that plagued your ancestors have cures, such as cancer and Alzheimer's, and nobody has to die waiting for an organ donation. At the same time, there has been the recognition that too much care, just like too little care, is harmful. Advances in technology have enabled the return of on-site visits so that every individual can receive care where it's most convenient, including in schools so that children never have to miss class and parents and caregivers never have to miss work.

You shudder at the inhumane practices of just one generation ago, when mental illness was stigmatized as personal failure or a source of shame, and when those with substance addiction landed in prison instead of being proactively offered behavioral or medical health treatment. Thanks to those changes in attitudes, the culture of mass incarceration has ended and the financial savings from not having to run a massive prison system nationwide has been redirected to create housing for the homeless population.

Back in 2016, there were still debates

over whether healthcare was a right of every citizen. That discussion has since been settled. Now healthcare is guaranteed for all, meaning that health insurance is moot and obsolete. With the acknowledgment that a shorter life span is linked to poverty came the clarity that improving health for many people begins with ending poverty. Fast-food establishments are plentiful, but they exclusively sell healthy foods. Ads for cigarettes, french fries, and sodas are found only in museums. Food deserts—neighborhoods where healthy food is not available—are a distant memory, and you cannot imagine any child going hungry. All of those advancements have resulted in dramatically extended life expectancies for everyone.

DOES THAT SOUND too far-fetched to be true? Perhaps. But imagine what those in 1966 might have said about the advances in medicine we have in 2016, such as the widespread use of vaccines for diseases such as measles that killed thousands of children, and CT scans that can visualize every organ in seconds. A future of healthcare that is rational, efficient, egalitarian, and proactive is in our grasp, but there are steps we must take today to make it a reality.

First, we need to go back to the basics of what healthcare is supposed to be about: taking care of people and meeting their needs, on their terms, where they are. We need to accelerate the movements to have patients and doctors as shared partners in medical decision-making. We need to make real change to the reimbursement system to help doctors spend more time with patients. Doctors should be reimbursed for time spent caring for and listening to patients, rather than for procedures performed on them. That will reorient our system to providing the right amount of care, not too much care.

Next, we need to change medical education. To drive bright students to areas of greatest societal need, medical school should be made free for those who commit to working with underserved populations and geographies, as well as into the primary care field, which cares for the whole person and not just one organ system. We should increase programs that begin developing students from as early as elementary school to become future health professionals, especially those who come from rural and urban communities, to improve the chances of their staying in their neighborhoods to serve them.

Last, we need to change the conversation from healthcare to overall healthfulness, which will require bold, broad, and innovative solutions. Healthcare is about the care we get from hospitals and medical facilities after we are already ill, but research shows that 60 percent of what determines our longevity depends on where and how we live, work, and play. It depends on attention to our overall emotional well-being. We must understand that a healthy life starts early, and therefore have successful public health interventions such as early childhood education and programs that send nurses into homes to help pregnant women and young mothers.

LET'S ENSURE THAT health is part of every conversation about the future of our society. There is no such thing as a non-health sector. If our children are unhealthy, they can't learn. We need all leaders to consider not only the fiscal impact of every policy but also the health impact. The recent travesty of lead poisoning in Flint, Mich., has demonstrated that government officials and businesses must be held accountable to put public safety ahead of profit and cost cutting. If there is a proposal for new schools, communities need to ask for plans showing how classrooms will be designed to maximize wellness (healthy air quality, plenty of options to move about) and how the school system will require innovative programs to give students access to fresh fruits and vegetables, not just in school hallways but at home, too. That must be seen as being as essential as the need to plan for fire escape routes. Similarly, if there is a proposal for a new city development, then doctors, health professionals, and patients alike must work together to ensure that there are walking and bike paths, and plenty of parks—which improve both physical and mental health. We must invest in physical infrastructure that makes exercise and exposure to nature an integral part of everyday lives so that no one has to put "working out" on her calendar, then be tempted to ignore it.

Person-centered health, exceptional quality of life, and health equity are all within our grasp. To get there, we have our work cut out for us, but the future of our society—and the generations who are not yet born—depends on us to be courageous and to look to do what is possible. All of us must speak up, call out the injustices that we see, and demand a future focused on good health for everyone.

TELL US WHAT YOU THINK

Express your opinions about the future of healthcare. Go to **ConsumerReports.org/futurehealth** to share your thoughts.

Leana S. Wen, M.D., *is the commissioner of health in Baltimore. She is an emergency physician and the author of "When Doctors Don't Listen: How to Avoid Misdiagnoses and Unnecessary Tests" (St. Martin's Press, 2012). She has practiced at Brigham and Women's Hospital and Massachusetts General Hospital. At George Washington University, she was on the faculty of the Medical and Public Health Schools and was the director of Patient-Centered Care Research. Follow her on Twitter* @DrLeanaWen.

ILLUSTRATION BY DAN PAGE

WORKING HARD TO PROTECT and promote the health of consumers over decades of dramatic and tumultuous change has long been a deeply held mission for Consumer Reports. Many of the battles we waged were daring, groundbreaking—and prescient.

A FEARLESS FIGHT FOR A SAFER WORLD

1930s

MAY 1936
Blowing bubbles. Overpromises were a huge part of many products' sales pitches. Case in point: Alka-Seltzer. Promoted as a cure-all for everything from colds and headache to fatigue and alcohol excess, we debunked the notion that the effervescent tablet is "some new and startling remedy." In reality, the active ingredient is ordinary aspirin, and the ballyhooed bubbling comes from a combination of citric acid and baking soda.

JULY 1936
Feel the burn. Though the medical community had yet to definitively link sun exposure and cancer, we tested "sunburn preventives" to see which protected skin. Most failed miserably on that count, and we didn't even dignify with testing outlandish claims such as those from Mor-Tan, which purported to prevent windburn, freckles, and poison ivy.

AUGUST 1936
Toxins for sale. The best-selling book "100,000,000 Guinea Pigs" (Grosset & Dunlap, 1933), by Frederick Schlink, founder of Consumers' Research (forerunner of Consumer Reports), and its director, Arthur Kallet, exposed dangers in everyday products. As part of the same effort, we published a blacklist of more than 100 dangerous drugs and cosmetics, including Anacin, Ex-Lax, Mary T. Gordon's Gray Hair Restorer, and Ruppert's Face Bleach. The products contained ingredients such as strychnine, arsenic, chloroform, mercury, and lead; some led to fatal poisonings.

DECEMBER 1936
Hold the vitamins. At a time when ads touted various vitamin-fortified foods as a panacea, we pointed out that there was little available research into the body's need for specific amounts of certain vitamins, and warned that overdoses could cause arterial damage or even death.

MAY 1937
Say "no" to nose drops. One of our earliest advocacy campaigns focused on halting the sometimes deadly practice of administering mineral-oil nose drops to children for congestion. We also warned of a similar aspiration hazard of forcing fats and oils–like the popular cod-liver oil–into the mouths of children. As a result of our coverage, the New York City Board of Health issued a general warning against the use of nasal oil in children under age 2.

NOVEMBER 1937
Tummy troubles. About one in 10 Americans habitually used remedies for chronic constipation. We reported on them frequently (including a four-part series in 1937), concluding that the products and their overuse "have contributed more to the ills and discomforts of mankind than the condition they're supposed to relieve."

SEPTEMBER 1939
Taking a stand. Following a National Health Conference, which revealed that one-third of Americans lacked healthcare or access to treatment, we made a pitch for universal coverage. "In a democracy, the welfare of every individual counts, and every life is valuable. If we are unable to overcome poverty, unable to provide a job for every man and woman willing to work and to guarantee a decent standard of living to everybody, we are collectively responsible for such a condition."

1940s

MAY 1944
Insomnia "cures." We cited "repressed anxiety" as a major culprit and urged doctors to refer patients to counseling. We supported "a cocktail, bath, or dull book" for mild cases, but acknowledged that sufferers might need medication. The drugs of the day were potentially dangerous barbiturates, sometimes available over the counter; we recommended use only under a physician's care.

JUNE 1946
Not so fast. When a Bayer aspirin ad in the Saturday Evening Post promised immediate pain relief and claimed its aspirin could dissolve in water in 2 seconds, we decided to test the claim. We found that Bayer didn't dissolve faster than other aspirins and reported that any aspirin took 15 minutes to 30 minutes to relieve a headache. The only difference: Bayer's price was "uniquely high."

OCTOBER 1947
Forget the flu shot. The vaccines were considered "highly experimental," so we urged most people to skip the shot that year. Before the end of the following year, we said, it was possible that preventive measures would be on much sounder footing.

1950s

JULY 1950
Speaking out about STDs. Thanks largely to the antibiotic penicillin, there was progress in

PHOTO, FAR LEFT: GENERAL PHOTOGRAPHIC AGENCY/GETTY IMAGES

Scan any page in this section using the Blippar app to learn more about the history of Consumer Reports *(see page 7 for details)*.

combatting syphilis, gonorrhea, and other sexually transmitted diseases. The taboo subject began to get coverage in the press, which we lauded for "penetrating the curtain of ignorance, shame, and silence" behind which those diseases could thrive. In 1949, syphilis alone killed 13,000 people in the U.S. We called on states to provide adequate diagnostic resources to identify who was infected.

JULY 1952
Lax laxatives. Hucksters hyped a constipation remedy as a get-thin-quick miracle in a tablet made with methylcellulose, a gum. Marketers also promoted it as a hunger suppressant because of its ability to swell in the stomach when taken with water. We called it out as a fad.

FEBRUARY 1955
The smoking gun. We first reported on the probable dangers of smoking in 1938. By 1953 we deemed the evidence "very suggestive" between heavy smoking and lung cancer. Two years later, as death rates continued to climb, we were further convinced that smoking was related to cancer and possibly other health problems, such as heart trouble and ulcers.

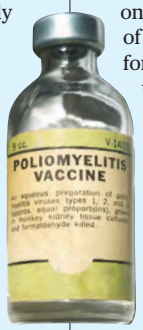
MARCH 1956
Victory against polio. In 1954 we optimistically stated that medical science was on the verge of conquering polio. Two years later we announced, "The development of the Salk polio vaccine is one of the great public health achievements of this century."

JULY 1957
The air up there. The air in many of our great cities was becoming unfit to breathe, we warned, pointing to pollution from cigarette smoke, industrial growth, and our dependence on heating and motor fuels. We worried that dirty air would, over time, lead to lung cancer, chronic bronchitis, and other diseases. We called on the auto industry to develop exhaust controls for its vehicles.

1960s

JUNE 1960
Insuring seniors. As health costs spiraled out of control, particularly for hospital services, Congress and Consumer Reports debated the best way to help seniors. "It is becoming increasingly likely that the solution to this huge problem is not going to be found with anything less than a national program," we said, despite opposition from many groups, including the American Medical Association and the Health Insurance Association of America. In July 1965 President Lyndon B. Johnson signed into law legislation that created two national health-insurance programs, Medicare and Medicaid.

JULY 1960
A plea for safer drugs. In testimony before a Senate subcommittee, Consumers Union's editorial director, Mildred Brady, called on officials to do a better job of policing the marketplace for substandard medications. She also skewered big pharma before it was fashionable, saying that the industry's scare tactics against less expensive generic drug alternatives were rooted in self-interest and designed to keep prices high because of a lack of competition.



SEPTEMBER 1962
Nuclear nightmare. In 1959 we reported that nuclear fallout from atomic-bomb testing was getting into milk in the form of radioactive strontium-90, feared to cause bone cancer and leukemia. Three years later additional bomb testing by the Soviets led to increased fallout in milk as iodine-131, which could over time lead to thyroid cancer. Our work exposing the dangers prompted the government to expand its monitoring of fallout and helped bolster public support for the 1963 nuclear test-ban treaty.

OCTOBER 1962
Thalidomide scare. Though thalidomide, a sleeping pill, was never approved for sale in the U.S., thousands of women who took it early in pregnancy gave birth to children with deformities including malformed limbs. We supported the swift movement of legislation that would demand that drugmakers do more thorough premarket testing, implement tighter manufacturing controls, and insist on fuller disclosure of side effects.

OCTOBER 1963
Antibiotics advocacy. Consumer Reports had long said that over-the-counter products should not contain antibiotics, so we applauded the Food and Drug Administration for ordering the makers of such lozenges, nose drops, deodorants, mouthwashes, and lotions to submit proof of the products' effectiveness or take them off the market.

AUGUST 1964
Contraceptives to count on. Before the sexual revolution was in full swing, our medical consultants rated family planning methods based on statistics that showed how well they protected against accidental pregnancy. Highly effective: condoms and diaphragms plus a spermicidal cream or jelly. As for the birth-control pill, our attitude was "cautious acceptance," though we noted ongoing questions about its safety and efficacy.

MAY 1966
Keeping doctors honest. While Congress investigated the questionable practices of physicians who made money from the sale of drugs, eyeglasses, and medical devices they themselves had prescribed, we suggested that consumers insist on a written prescription and have it filled independently.

OCTOBER 1967
Mood meds. With doctors writing more than 33 million prescriptions per year for antianxiety, antipsychotic, and antidepressant drugs, we asked, "Is anything much being accomplished?" We evaluated the research behind those drugs, noting potential side effects and providing safety cautions. And we praised antipsychotic drugs for helping to reduce the number of psychiatric hospitalizations.

SEPTEMBER 1968
Screen shots. Our engineers Rated two television sets, an Admiral and a Packard Bell, Not Acceptable for exceeding radiation levels generally accepted as the safe maximum. We told consumers not to worry about radiation seeping through walls or floors but cautioned them (and their kids) not to habitually sit closer than 6 feet from a "large" screen (18 inches or more).

1970s

MARCH 1970
Poison paint. Though manufacturers stopped making interior paint with high lead concentrations in the 1950s, poisonings among children remained high, with most cases traced to lead paint flakes in old dwellings. Still, many products on the market contained appreciable amounts of lead, so we called on manufacturers to reveal the actual lead content on all of their paints.

NOVEMBER 1972
Writing the book on drugs. Our breakthrough book "Licit and Illicit Drugs" (Little, Brown and Company, 1972), by medical writer Edward M. Brecher, was a compendium on the effects of mind-altering drugs from narcotics to nicotine on individuals and society. The New York Times described it as a "towering work of scholarship."

PHOTOS, FROM LEFT: CRAIG VAN DER LENDE/GETTY IMAGES; H. ARMSTRONG ROBERTS/CLASSICSTOCK/GETTY IMAGES

JANUARY 1974
Platform shoes hit a low. Platform shoes were high fashion but also quite hazardous. Aside from risk of falls, we warned that the rigid soles impeded the foot's normal flexing, straining ankles, knees, and hips, and possibly causing backaches, poor posture, and pulled muscles. Our advice: "For consumers who already own platform shoes: Walk slowly. Our advice for those who have resisted the temptation: Walk proud."

SEPTEMBER 1974
How to choose a hospital. When choosing a doctor, it's important to consider the hospital he or she admits patients to. We urged consumers to look for a facility that's accredited, with our highest praise reserved for teaching or government-sponsored hospitals affiliated with medical schools.

MARCH 1975
Pot position. "The time has come to take a fresh look at the dangers of marijuana," we wrote after concluding that research failed to prove that pot is either harmful or harmless. But we were certain that possession should be decriminalized, making us one of the first national organizations to say so.

OCTOBER 1975
Chiropractic controversy. In a two-part series that prompted picketing of our headquarters, we assessed the benefits and risks of spinal manipulation. Our conclusion: Licensing laws lend an aura of legitimacy to unscientific practices designed to protect practitioners rather than the public. We called for state and federal restrictions on the services chiropractors could provide.

OCTOBER 1979
Best condoms. Our lab tests of condoms—which included inflating them with air until they popped, among other measures—found all 161 models acceptable. We endorsed condom use and included a guide to proper usage.

1980s

AUGUST 1983
Healing heartburn. With Rolaids and Tums on the candy rack next to Life Savers, antacid addiction became a concern. We reported that overuse merely sugarcoated a stomach problem, and abuse could aggravate gastrointestinal problems and mask other potentially serious ones. We recommended using antacids no more than once per week.

JANUARY 1984
Sex after 50. "Love, Sex, and Aging" (Little, Brown and Company, 1984), written by Edward Brecher and the editors of Consumer Reports, was based on a five-year survey about the sexual attitudes and activities of 4,246 people over age 50. "For those comfortable with honest, open language, this book affirms the potential for enjoyment and sexual fulfillment for people from age 50 into the 80s," we said.

MARCH 1985
Antibiotics for animals. More than 40 percent of the antibiotics produced in the U.S. go into animal feed to boost growth, we revealed. (Today that number is a staggering 80 percent.) Our position then and now: Antibiotic overuse and misuse is a big problem, diminishing the effectiveness of drugs such as penicillin to treat human disease and creating strains of new bacteria that are resistant to antibiotics.

MAY 1986
Toxic-shock warning. Toxic shock, a condition mostly associated with menstruating women who used "superabsorbent" tampons, proved deadly. In 1982 the FDA recommended that women who use tampons buy those with the lowest absorbency needed. Trouble was, one brand's "regular" could be more absorbent than another's "super plus," so we urged the FDA to issue a uniform standard. (They did so in 1989.)

NOVEMBER 1986
Fear of AIDS. Though the disease—and public fears—were spreading, we dispelled the myth that AIDS was spread through casual contact. We also made it clear that both heterosexuals and homosexuals were at risk. Three years later we published a safety guide for teens by Karen Hein, M.D., with art by Keith Haring.

1990s

JULY 1990
Genetic testing forecast. Though the day may not be far off when we can forecast illness years in advance of the appearance of symptoms, we reported in a cover story called "The Telltale Gene," we pointed out that a danger of discrimination casts a troubling pall over genetic tests. Unless society can protect the rights of individuals, we said, predictive testing could swell the ranks of the uninsured.

JULY 1992
Squandered spending. Of the $817 billion that Americans were expected to spend on healthcare, we said in the first of a three-part series on healthcare, at least $200 billion will be squandered on overpriced, useless, even harmful treatments, and on feeding a bloated bureaucracy. If those wasted dollars were redirected, we asserted, the U.S. could cover all of the people who were then uninsured without spending a penny more.

JANUARY 1993
Insurance action. Many big health insurers were changing to for-profit entities—and rewarding executives and shareholders with the spoils. We successfully fought the trend in 36 states so that open hearings were required to consider whether those actions were in consumers' interest. If the deal was approved, an independent foundation must be created with the assets. Today, more than 300 such foundations hold $26 billion in value—funds used to support public education and prevention efforts, and tobacco-control initiatives.

JANUARY 1995
Secondhand smoke. As evidence mounted regarding the dangers of secondhand smoke from breathing other people's cigarettes, Big Tobacco played the same denial game as it had for years about the dangers of smoking. We skewered the industry, reporting that, "A number of studies make a consistent case that secondhand smoke, like firsthand smoke, causes lung cancer."

FEBRUARY 1997
Focus on ADD. Attention deficit disorder was hailed as a diagnosis that finally explained the personal struggle of millions—but it was also denounced as a label that could be applied too hastily by parents, teachers, and

PHOTOS: ROBERTO BROSAN/GETTY IMAGES (TOP LEFT); GETTY IMAGES (BOTTOM RIGHT); BORIS SPREMO/GETTY IMAGES (BOTTOM LEFT)

doctors. We warned about the overuse of Ritalin to calm an overactive child, encouraging the use of a combination of therapies: behavior modification, psychological help, and classroom assistance, as well as medication.

AUGUST 1997
Mad cow mania. When the FDA issued rules to thwart the fatal brain illness, we complained that the agency—though prohibiting feeding cattle and sheep remains to other cattle and sheep—didn't go far enough because it failed to impose a ban on chicken, horse, and pig remains in animal feed.

OCTOBER 1999
Drugstores undercover. Our drugstores Ratings accompanied an expose of websites selling dangerous drugs that were claimed to help drop pounds, grow hair, and improve your love life, without seeing a doctor. And in our undercover investigation, many pharmacists failed to warn our secret shoppers when they bought a potentially dangerous combination: the prescription drug warfarin (Coumadin) and ginkgo biloba supplements that, when taken together, could increase the risk of serious bleeding and possibly cause a stroke.

2000s

JUNE 2001
Jock jam. Americans spent $1.4 billion in 1999 on pills, drinks, and powders to bulk up, slim down, or become better athletes. The few good scientific studies suggested the products didn't work or only gave athletes a slight edge. Worse, we said, some contain potentially harmful substances. Two years later we helped to pass legislation in California banning supplements with ephedra, an herbal stimulant that acts like an amphetamine. In 2004 the FDA banned the sale of supplements containing ephedra.

AUGUST 2001
Vaccines backlash. Our investigation found significant gaps in the system for monitoring the safety of vaccines; that the FDA and Centers for Disease Control and Prevention were slow to address correctable problems, such as the use of mercury as a preservative; and that adversarial treatment of those who sought compensation for bad reactions was fueling the growing chorus of anti-vaccination forces.

JANUARY 2003
Hospital safety. Our hospitals survey of 21,000 subscribers revealed enormous variations in treatment. Those who were less than highly satisfied (22 percent) complained about unanswered calls for help, inadequate pain relief, pressure to leave the hospital too soon, or complications related to hospitalization. Six percent reported that they had developed an infection while in the hospital or shortly after. We began our Safe Patient Project campaign to push hospitals to publicly report their infection rates, which is now mandatory in some states.

DECEMBER 2003
A dark diet drug. We raised a red flag about the prescription weight-loss drug sibutramine (Meridia), writing that since 1998 the FDA had received reports of 49 deaths from heart disease that were linked to use of the drug. Our medical consultants advised not to use it or other weight-loss medications because none had been proved safe or effective long-term. (It took until 2010 for Meridia to be taken off the market.)

NOVEMBER 2004
Sharing side effects. We launched our Prescription for Change campaign, which, among other issues, advocated for landmark federal legislation (passed in 2007) that prevented drug companies from downplaying harmful side effects. The cornerstone of the law required clinical drug trial results be made public so that consumers could know the good and bad news about meds.

DECEMBER 2004
Best Buy Drugs debuts. Consumer Reports was awarded a grant to educate consumers about prescription drugs for common health conditions based on their effectiveness, safety, and price, and to help patients talk to their doctors about the most effective and affordable treatment options.

FEBRUARY 2005
The trouble with tanning. Millions of Americans were lured to tanning salons by bogus claims that indoor tanning was safer than sunlight. Our survey of 296 salons exposed widespread failures to inform customers of risks, including wrinkles and skin cancer, or to enforce safety procedures such as wearing goggles. The industry, we concluded, was minimally regulated and a danger to consumers. (Regulations came later, in 2015.)

SEPTEMBER 2006
Bad nursing homes. Almost 20 years after a landmark federal law was passed to improve the nation's nursing homes, a Consumer Reports probe revealed that poor care remained all too common. Our analysis of state inspection reports for 16,000 nursing homes nationwide led to the CR Nursing Home Quality Monitor, a list of the best and worst homes by state.

MAY 2008
Full disclosure. Consumer Reports launched its Health Ratings Center, which shares data about doctors and hospitals that were previously undisclosed or so complex as to be indecipherable. An editorial in the New England Journal of Medicine described the release of heart surgeon performance data as a "watershed event in health care accountability."

SEPTEMBER 2008
Hospital mistakes. We lauded a new federal law that penalized hospitals for mistakes such as leaving sponges in patients after surgery or giving them the wrong blood type. Previously, Medicare, private insurers, or patients were usually billed for the extra care required to recover from errors.

MARCH 2010
Deadly infections. Doctors once considered central line-associated bloodstream infections an unavoidable risk of intensive care, but we publicized research that showed patients could be spared if hospitals followed a checklist of hygienic precautions. By 2014 the CDC had found a 50 percent decrease in those infections, saving thousands of lives.

MAY 2012
Joint effort. Tens of millions of Americans live with medical devices—artificial joints, surgical mesh, heart defibrillators—but rarely were they tested for safety and effectiveness. Congress did not heed our call for testing, among other reforms. But public support did help prevent further weakening of FDA oversight.

JUNE 2012
ODing on good intentions. Overprescribing drugs and ordering excessive tests and procedures can be hazardous to your health—and your wallet, we reported. Working with a coalition of medical organizations in a project dubbed Choosing Wisely, we identified tests and treatments that were done too often, such as antibiotics for sinusitis.

DECEMBER 2014
A beautiful death. Our multimedia feature on palliative care helped families navigate the difficult decisions surrounding end-of-life care and was nominated for a National Magazine Award.

AUGUST 2015
The rise of superbugs. Dangerous antibiotic-resistant infections were growing stronger, we warned in an award-winning three-part series. It's a mess of our own making due in part to overprescription, leading to infections that can cause serious illness and death.

PHOTOS, FROM TOP: PETER DAZELEY/GETTY IMAGES; GETTY IMAGES

ROAD REPORT

RATINGS FROM OUR TEST TRACK *plus* EXPERT CAR ADVICE

ILLUSTRATIONS BY GLUEKIT

Get More Flash in Your Dash

Even if your current car doesn't have an infotainment system, chances are your next one will. Our survey involving 58,000 vehicles reveals the smooth operators—and those that are more trouble than they're worth.

by Tom Mutchler

FOR MANY OF US the smartphone has become our portal to the larger world. It's the way we connect with friends and family by phone, video chat, or text; it's how we listen to music; it guides us dutifully and reliably to restaurants, weddings, and dentist appointments. Take away our smartphones and many of us simply feel marooned.

Which is not how automakers want us to feel when behind the wheel. It's why for more than a decade they've developed infotainment systems that will do everything a smartphone will do–in a much less distracting way.

Though each automaker's system comes with different bells and whistles, most look pretty similar: a 5- to 8-inch screen set in the center console (or sprouting up from it) and controlled by touch-screen technology, a knob, or a touchpad.

But that's where the similarities end. Our recent survey, involving more than 58,000 vehicles (2013 to 2016 model years), asked owners how satisfied they are with their infotainment systems. The results revealed that the systems are far from uniform in user experience and reliability.

In general, systems that have large, easy-to-read screens and traditional radio knobs fared better than systems with smaller displays or touch-sensitive buttons. Among the most common complaints: voice-command technology that doesn't work or requires very specific language prompts, systems that crash or are slow to respond, and costly updates to the navigation maps.

Our survey also showed that there's not necessarily a correlation between vehicle cost and system quality. Cadillac Cue and the latest Infiniti infotainment systems, for instance, are poorly rated. On the other hand, it turns out that trouble-prone cars can have stellar systems. Very few Chrysler models are recommended by Consumer Reports, yet the brand's infotainment system is the favorite of our respondents.

Of course, consumers weigh many factors when deciding which car to buy–safety, fuel economy, reliability, and performance among them. As infotainment systems become standard equipment, they're likely to become an ever more important part of the decision-making process for new-car buyers.

THE EXCELLENT EIGHT

Great infotainment systems don't necessarily come in great cars–and vice versa. We've called out eight perfect pairings, meaning vehicle models we recommend that have top-performing infotainment systems to match.

AUDI A6
Comfortable, sporty, and fun to drive, with an infotainment system that's tactile and easy to use once learned.
OVERALL SCORE 84

DODGE DURANGO
A luxurious, refined, and capable SUV with an infotainment system that's the favorite among owners.
OVERALL SCORE 76

BMW 3 SERIES
A sports sedan that's fun to drive, with pinpoint handling and a first-rate infotainment system—once you get the hang of it.
OVERALL SCORE 75

BUICK REGAL
This satisfying sports sedan has agile handling; a quiet, comfortable cabin; and a highly intuitive infotainment system.
OVERALL SCORE 78

CHEVROLET IMPALA
A thoroughly modern and enjoyable car that has a quiet, roomy cabin and an infotainment system with no-nonsense knobs and buttons.
OVERALL SCORE 81

HYUNDAI GENESIS
This exceptionally quiet and comfortable luxury car comes with a straightforward touch screen and a controller knob for easier use.
OVERALL SCORE 78

HYUNDAI SONATA
An affordable performer with decent fuel efficiency, the Sonata comes with the most-liked voice-command and Bluetooth systems.
OVERALL SCORE 76

KIA OPTIMA
The modestly priced Optima has nimble handling, comfortable seats, and a winning infotainment system. (Go for the larger screen.)
OVERALL SCORE 81

OWNER SATISFACTION SURVEY

INFOTAINMENT SYSTEMS

They can be technological marvels that make driving a dream, or so difficult to use that they're downright infuriating. Here, our subscribers get real about their infotainment systems.

CHRYSLER'S UCONNECT 8.4-inch touch screen proves to be intuitive and quick to respond.

THE STANDOUT

1

Fiat-Chrysler Uconnect 8.4

70% VERY SATISFIED

Its straightforward touch-screen design, combined with a few traditional knobs and buttons, helps make Chrysler's Uconnect 8.4 infotainment system a favorite with consumers. Satisfaction with Bluetooth and voice commands—often sore spots with drivers—ranked highly. Don't confuse the 8.4 with Chrysler's lesser Uconnect systems, which have smaller screens, less capability, and a much lower satisfaction rating of 49 percent. With an infotainment system this good, it's too bad very few Chrysler models are recommended by Consumer Reports.

VERY GOOD

2

Hyundai Blue Link

63% VERY SATISFIED

Hyundai specializes in making intuitive systems. A 2015 Hyundai Sonata owner says he's "amazed at how easy it works." Other owners appreciated that the Genesis incorporates both a touch screen and controller knob. Hyundai's quick-to-learn voice command and Bluetooth systems rank highest for owner satisfaction.

3

BMW iDrive

60% VERY SATISFIED

BMW's iDrive employs a console-mounted controller knob, although the latest version adds a touch screen and is easier to use than earlier iterations. Still, mastering iDrive takes some time. It's super-reliable, with good Bluetooth connectivity. Owner satisfaction with Bluetooth and call quality is very high, as is the system's thoroughness: "It is very comprehensive and tells me everything about my vehicle," an owner says. An X3 owner added, "The learning curve is fairly steep, but the system is not bad once you get the hang of it."

4

GM (Chevrolet, Buick, GMC) MyLink/IntelliLink

57% VERY SATISFIED

These high-ranked systems from Chevrolet, Buick, and GMC closely mirror Chrysler's design. Screens are intuitive, most fonts are large, and there are multiple traditional knobs and buttons. Steering-wheel remote controls are comprehensive. Owners generally like using the OnStar system, which can call a live GM concierge for roadside assistance or to download directions straight to the navigation system.

5

Kia Uvo

57% VERY SATISFIED

Like sister company Hyundai, Kia has infotainment systems that use knobs and buttons along with a touch screen. We suggest splurging for the optional navigation system's larger screen; a 2016 Sorento owner complains that the basic screen "is way too small, and the messages on it are even smaller."

6

Audi MMI

57% VERY SATISFIED

MMI uses a controller knob, buttons, and a screen. The system is complex, but many agreed with the 2013 Q5 owner who said it "takes getting used to. Once mastered is intuitive." The latest Audis feature the optional Virtual Cockpit—which replaces normal instrument gauges with a big digital screen that can display Google Maps and phone calls straight ahead of the driver.

7

Lexus Remote Touch

56% VERY SATISFIED

This system uses a trackpad or mouselike joystick, and a high-mounted display screen. A Lexus RX owner reports that "using the mouse-based system is cumbersome but manageable." Owners like that the touchpad is easier to reach than a faraway touch screen. Lexus also won praise for easy-to-use Bluetooth audio streaming.

AVERAGE

8

Nissan NissanConnect

54% VERY SATISFIED

Pairing a bright screen with knobs and buttons, Nissan's infotainment systems are intuitive to use, with Bluetooth audio streaming that works well.

9

Infiniti Infiniti Connection

54% VERY SATISFIED

Most Infiniti models are relatively long into their market cycle, which explains the dated-looking graphics of their infotainment systems. But Connection, which combines a touch screen with a controller knob, works better than the newer, slow, and glitch-laden Infiniti InTouch system that rolled out first with the 2014 Q50 sedan. A worrisome note: The InTouch system, when separated from the overall Infiniti brand, finished dead last in our rankings—with only 38 percent very satisfied—because of its frequent software crashes and slow startup.

10

Volvo Sensus Connect

52% VERY SATISFIED

Most current Volvo models use familiar-looking radio knobs and buttons to control a center screen. Winding your way through the menus isn't intuitive or easy. The new generation of Volvo infotainment, launched with the 2016 XC90 SUV, uses a large iPad-like touch screen that requires a lot of fingertip swiping to navigate.

11

Mercedes-Benz Comand

51% VERY SATISFIED

Comand pairs a center knob controller with a display screen. Earlier iterations were relatively easy to use, especially for a German luxury brand known for having complicated engineering. But though many rivals are simplifying, the latest versions of Comand have grown more complex, losing familiar knobs and buttons, and gaining a protuberant touchpad and more involved menus.

12

Subaru Starlink

50% VERY SATISFIED

For years, Subaru's infotainment systems were antiquated. Recent models finally have a modern touch-screen system combined with knobs and buttons. Although clearly improved, the new system remains decidedly average. Voice commands and Bluetooth satisfaction are average as well. Owners complained that the glossy screen "reflects bright sunlight, making it hard to see." Many owners complained that the navigation system cannot be programmed when the car is moving.

13

Ford MyFord/ MyLincoln Touch

49% VERY SATISFIED

Ford was an early innovator in infotainment. But owners of MyFord Touch report reliability problems, with the system "constantly rebooting" and sometimes requiring replacement. Subsequent years have had fewer problems, but the screen design remains cluttered and unintuitive. Certain models replaced buttons and knobs with touch-sensitive flush buttons that were "overly touchy." A 2013 Fusion owner writes, "MyFord Touch is a wonderful idea that was mostly implemented but was never really finished." Ford is rolling out the new Sync 3 system, which responds quicker and is easier to use.

14

Mazda Mazda Connect

49% VERY SATISFIED

One owner sums it up well: "Mazda still has some work left to do." Mazda's latest system uses a large central controller knob to select from a display screen. Another owner says, "I'm not impressed. It's difficult to get through all of the steps to get what I want." Owners were frustrated that the touch screen works only when the vehicle is stopped and that the voice-recognition system often misunderstands commands. One owner complained that the Bluetooth was "incredibly flaky and crash-prone."

15

Honda HondaLink/AcuraLink

49% VERY SATISFIED

Honda and Acura infotainment systems come in several designs, none of which make owners happy. Many were dissatisfied with voice-command quality—the lowest-ranked among all brands. One owner found it "very difficult to use the commands because they must be said in 'Acura-speak,' not commonly used English words." Our tests found the onscreen buttons and menus to be unintuitive.

BACK TO THE DRAWING BOARD

16

Toyota Entune

44% VERY SATISFIED

Toyota's system combines a touch screen and regular knobs and buttons, but the "whole thing is hit and miss," one owner says. Complaints include small screens and slow system response. Voice commands often proved to be frustrating to use. The Entune app capability seems "clunky compared to phone apps." Many respondents voiced frustration that the navigation system cannot be programmed while the car is in motion, preventing even passengers from entering a destination.

17

Cadillac Cue

40% VERY SATISFIED

Owners criticize Cue for being "sluggish" and trouble-prone, findings backed up by Consumer Reports' reliability data. Some owners report having difficulty using Cue for months, even years, after purchase. A typical complaint: "This car REALLY needs a co-pilot with an IT degree." Many criticisms focus on capacitive-touch buttons that are overly sensitive; one consumer noted that you "barely wave your hand in front of the Cue system and you change radio stations."

TAKING APPLE AND GOOGLE ALONG FOR THE RIDE

Love everything about your car except its infotainment system? There's an app for that. Apple's CarPlay and Google's Android Auto systems bring the familiar functionality of smartphones to the car's screen, so there's no need to bother with a clunky automaker's system that was installed at the factory. All you have to do is plug your Apple or Android phone into any car that supports the system, and a modified version of your smartphone screen (with bigger icons and edited-down menus) appears on your dash monitor quicker than you can ask Siri for the score to last night's baseball game.

CarPlay and Android Auto work well for phone calls and reading back text messages. They also provide voice-activated navigation that's easier to use than the systems installed by most auto manufacturers. Another meaningful advantage of CarPlay and Android Auto: Cloud-based maps and points of interest are always up to date, eliminating the need for costly map updates. And the most current software is just a download away. (Automakers can have difficulties keeping their native software current.)

As good as CarPlay and Android Auto are, there are drawbacks: They won't work in older cars without an aftermarket head unit. And though more than 100 models since 2016 support them, that's only about one-third of new vehicles on the market.

CarPlay's music player can be cumbersome, and in GM models, it hides the outside-temperature display. On Android Auto, Pandora and Spotify have similar artist-song-album displays that rob unique features. In cars without a touch screen, such as Audi and Mercedes-Benz, you need to awkwardly use the system's dial controller. And switching to broadcast or satellite radio requires you to change from the smartphone app to the car's system.

Worth the Splurge

The Audi Q7 gets top scores for a reason: It's the best SUV we've tested to date

OVERALL SCORE 87

LUXURY 3-ROW SUVs

Audi Q7

WANT A QUICK, elegant, cat-nimble, relatively fuel-efficient, seven-passenger SUV brimming with useful high-tech features? The redesigned 2017 Q7 delivers—which is why it's now our top-rated SUV.

A calm, tranquil cabin shields occupants from exterior ruckus without insulating the driver from a fun cruise down the road.

The Q7 rides comfortably, but some underlying firmness creeps in at low speeds. You can get a $64,300 Prestige edition with an optional $4,000 air suspension system that impressively cushions that slight discomfort, if it bothers you.

As it romped through our test track's avoidance maneuver, we found that our roomy Q7 handles more like a smaller SUV. Like all Audis, the Q7 is predictable, balanced, and bracing to drive, even under pressure. The 333-hp gasoline engine provides plenty of smooth and effortless thrust. The previous Q7 offered a diesel variant, but the emissions scandal surrounding parent company Volkswagen has put its diesel plans on hold.

The Q7 continues Audi's trend of modernist-luxury interiors. It's a joy to run your fingers over the matte wood, brushed aluminum, and double-stitched leather. The infotainment and controls are daunting at first but over time prove to be logical.

Though it's pricey, the Q7 is a good reason to spend part of your children's inheritance on a car.

TESTED VEHICLE	
ROAD-TEST SCORE	96
HIGHS	Powertrain, quiet, handling, braking, infotainment, luxurious interior, towing capacity, standard frontal-collision avoidance
LOWS	Learning curve for controls, unintuitive shifter, rear visibility
POWER-TRAIN	333-hp, 3.0-liter V6 supercharged engine; 8-speed automatic transmission; all-wheel drive
FUEL	20 mpg
PRICE AS TESTED	$68,695

Tight as a Drum

Sharing underpinnings with the luxuriant C-Class sedan, Mercedes' newest SUV delivers athletic performance

OVERALL SCORE 69

LUXURY COMPACT SUVs

Mercedes-Benz GLC300

THIS OPULENT cocoon delivers bank-vault solidity and solitude, is enjoyable to drive, and possesses the essential Mercedes luxury touches that convince people to part with a large chunk of change.

The GLC has one of the most comfortable rides of any small SUV. It's also strikingly silent, with the thrum of the 241-hp four-cylinder turbo engine barely intruding upon the interior.

You also get some athletic chops that make the GLC surprisingly fun to drive for an SUV, with steering that responds crisply to your command. Forward-collision warning with automatic braking is standard—we award bonus points for that.

Despite its small size, the 2.0-liter engine pulls the GLC with ease. The nine-speed transmission keeps the engine performing in its sweet spot. That combination returned 22 mpg overall.

The interior is elegant and well-assembled. Front accommodations are roomy and relaxed, but it's unfortunately snug for those in back. There's a steep learning curve needed to master the fussy controls and infotainment system, which has a distracting and cumbersome user interface.

The GLC's predicted reliability is based mostly on the donor C-Class sedan's below-average rating. Our forthcoming 2016 owner survey will tell us more.

TESTED VEHICLE	
ROAD-TEST SCORE	81
HIGHS	Ride, agility, interior finish, fuel economy, seat comfort, standard frontal-collision avoidance
LOWS	Controls, raspy engine
POWER-TRAIN	241-hp, turbocharged 2.0-liter 4-cyl.; 9-speed automatic; all-wheel drive
FUEL	22 mpg
PRICE AS TESTED	$49,105

PHOTOS: JOHN POWERS

Scan these pages using the Blippar app to see how these cars perform on our test track *(see page 7 for details)*.

The Average Driving Machine

The second-generation BMW X1 is larger, roomier, and more practical than its predecessor. But it falls short on traditional BMW traits.

OVERALL SCORE 69

LUXURY ENTRY-LEVEL SUVs

BMW X1

EVEN THOUGH the BMW X1 compact SUV earned a decent road-test score and ranks well among its competitors, its dynamic responsiveness lacks the purity we expect from the German brand.

A zippy turbocharged four-cylinder provides alert acceleration should you need to squirt through traffic. The transmission performs smooth and quick upshifts. Fuel economy is impressive for the class.

But unlike most BMWs, the X1 lacks a certain handling precision. It's capable of hustling down a back road, but the patented BMW verve and fun factor aren't present.

This second-generation X1's ride gets jittery over rough surfaces, and noise from the road and an uncultured engine are coarse inside the cabin—unbefitting a luxury brand. Braking, however, is confidence inspiring, with short stops.

The X1's ride height feels akin to driving a tall wagon. But the front seats are insultingly small and narrow; the short seat cushion has the thigh support of a beach chair.

As is typical BMW, the X1 features an attractive come-on price, but key safety features cost additional. And blind-spot monitoring isn't available at all.

If you're new to BMW, you'll probably find the new X1 capable and inviting. Come with a knowledge of BMW's inherent brand qualities and you might be in for a letdown.

TESTED VEHICLE	
ROAD-TEST SCORE	74
HIGHS	Transmission, braking, fuel economy
LOWS	Road noise, narrow front seats, stiff ride, no blind-spot monitoring
POWER-TRAIN	228-hp turbo 2.0-liter 4-cyl.; 8-speed automatic transmission; all-wheel drive
FUEL	26 mpg
PRICE AS TESTED	$44,745

Fuel Sipper With an Improved Ride

Toyota pioneered the small SUV and invented the hybrid—now it has married the two. Plus all RAV4s get some smart upgrades.

OVERALL SCORE 76-76 XLE, Hybrid

COMPACT SUVs

Toyota RAV4

LET'S CUT to the chase: At 31 mpg in our tests, the Toyota RAV4 Hybrid has the best fuel economy of any SUV that doesn't plug in.

In an era of two-buck gas (for however long that lasts), you may feel cavalier about that statistic, but don't ignore the fact that the entire RAV4 lineup's midcycle update also boasts an improved ride, a quieter cabin, and slightly updated styling.

Regardless of which version you pick, the 2016 RAV4 provides a strong blend of fuel efficiency, ride comfort, roominess, and reliability.

The base 176-hp, 2.5-liter four-cylinder provides responsive power and a respectable 24 mpg. The hybrid version feels even punchier accelerating away from a full stop.

Toyota changed the RAV4's overly firm ride into something more cushy, although at a slight sacrifice of handling precision. Toyota also quieted the din of wind, road, and engine noise that seeps into the cabin.

Front and rear seating are spacious—but inferior seat cushion support meant we emerged from the RAV4 needing to perform some "good morning" stretches. Also, a power driver's seat comes only on expensive SE and Limited trims.

Despite some odd price and equipment matchings, the RAV4 is one of the most reliable small SUVs you can buy. Those upgrades keep it among the top-ranked models in its class.

TESTED VEHICLE	
ROAD-TEST SCORES	75 (XLE) 74 (Hybrid XLE)
HIGHS	Room, ride, access, reliability, Hybrid mpg
LOWS	Seats lack support, daytime running lights easy to cancel, child seats hard to secure
POWER-TRAIN	XLE 176-hp, 2.5-liter 4-cyl.; 6-sp. auto. trans. Hybrid XLE 194-hp, 2.5-liter 4-cyl. hybrid; CVT; all-wheel drive
FUEL	24 mpg (XLE) 31 mpg (Hybrid)
PRICE AS TESTED	$29,014 (XLE) $29,753 (Hybrid)

PHOTOS: JOHN POWERS

Ratings: Every Kind of SUV Under the Sun

Scores in context: Recommended models did well in our road-test score and had average or better predicted reliability. They also performed adequately in government or insurance-industry crash tests, if tested. The Overall Score factors in road-test score, reliability, safety, and owner satisfaction. For full Ratings, available to online subscribers, check out ConsumerReports.org/cars

☑ Recommended

Better ◀——▶ Worse

Recommended	Rank	MAKE & MODEL	PRICE		RELIABILITY	SAFETY	ROAD-TEST RESULTS									
			As Tested	OVERALL SCORE	Predicted	Front Crash Prevention	Road-Test Score	Overall MPG	Acceleration 0-60 MPH, Sec.	Dry Braking 60-0 MPH, Ft.	Avoidance Maneuver Speed, MPH	Routine Handling	Ride/Noise	Seat Comfort Front/Rear	Controls	Cargo Volume, Cu. Ft.
COMPACT SUVs																
☑	1	**Subaru Forester** 2.5i Premium	$27,145	**83**	◓	Opt.	85	26	8.7	127	52.0	◓	○/○	◓/●	●	35.5
☑	2	**Toyota RAV4** Hybrid XLE	$29,753	**76**	●	Opt.	74	31	8.7	136	49.5	◓	◓/◓	○/◓	◓	30.0
☑	3	**Toyota RAV4** XLE	$29,014	**76**	●	Opt.	75	24	9.3	135	51.0	◓	◓/◓	○/◓	◓	37.0
☑	4	**Hyundai Tucson** Sport (1.6T)	$28,670	**75**	○*	Opt.	79	26	8.4	128	53.0	◓	◓/◓	◓/◓	●	29.5
☑	5	**Mazda CX-5** Touring (2.5L)	$28,090	**74**	◓	Opt.	74	25	8.0	133	52.5	◓	○/○	◓/◓	◓	33.0
☑	6	**Hyundai Tucson** SE (2.0L)	$25,920	**73**	○*	Opt.	76	24	11.0	129	54.0	◓	◓/◓	◓/◓	●	29.5
☑	7	**Nissan Rogue** SV	$29,920	**71**	○	Opt.	74	24	9.5	134	54.0	○	◓/○	○/◓	●	31.5
☑	8	**Honda CR-V** EX	$27,500	**69**	○	Opt.	73	24	9.0	134	51.5	◓	○/○	◓/◓	○	36.0
!	9	**Ford Escape** SE (1.6T)**	$28,040	**59**	◒	NA	75	22	9.9	133	52.5	◓	◓/◓	○/◓	◓	35.0
LUXURY ENTRY-LEVEL SUVs																
☑	1	**Audi Q3** Premium Plus	$40,125	**80**	●	NA	77	22	8.4	132	51.5	◓	◓/◓	◓/◓	○	24.5
	2	**BMW X1** xDrive28i	$44,745	**69**	○*	Opt.	74	26	7.9	134	53.0	◓	○/○	○/○	◓	27.0
	3	**Mercedes-Benz GLA250**	$42,210	**61**	◒*	Std./●	70	26	6.9	128	54.5	◓	○/○	◓/◒	◒	23.0
LUXURY COMPACT SUVs																
☑	1	**Lexus NX** 200t	$43,284	**77**	●	Opt.	74	24	7.5	132	49.5	◓	○/◓	◓/◓	○	28.5
☑	2	**BMW X3** xDrive28i (2.0T)	$44,595	**76**	○	Opt.	82	23	7.3	130	53.0	◓	○/◓	◓/◓	○	33.0
☑	3	**Audi Q5** Premium Plus (2.0T)	$43,675	**75**	◓	Opt.	78	21	7.9	130	52.0	◓	○/◓	◓/◓	○	32.0
☑	4	**Acura RDX**	$38,990	**72**	◓	Opt.	75	22	6.6	132	51.0	○	○/◓	●/◓	○	31.5
	5	**Mercedes-Benz GLC300**	$49,105	**69**	◒*	Std./●	81	22	6.8	132	50.0	◓	◓/◓	●/◓	◒	28.0
	6	**Lincoln MKC** Reserve	$46,485	**55**	●	Opt.	72	19	7.8	125	54.0	○	○/◓	◓/○	○	30.5
LUXURY 3-ROW SUVs																
☑	1	**Audi Q7** Premium Plus	$68,695	**87**	○*	Std./◓	96	20	6.7	127	50.0	◓	◓/●	●/●	○	35.5
☑	2	**Acura MDX** Tech	$51,410	**76**	◓	Opt.	79	21	6.8	135	52.0	○	◓/◓	◓/◓	◒	34.0
	3	**BMW X5** xDrive35i	$70,050	**73**	◒	Opt.	84	21	7.4	137	52.0	◓	◓/●	●/◓	◒	34.5
	4	**Volvo XC90** T6 Momentum	$56,805	**71**	◒*	Std./●	84	20	7.7	126	52.5	○	○/◓	●/●	◒	35.0
	5	**Mercedes-Benz GLS350d** (GL)**	$73,020	**61**	●	Std./○	82	20	8.2	136	44.5	○	●/●	●/●	○	47.0
	6	**Land Rover Range Rover Sport** HSE (3.0L)	$74,040	**57**	●*	Opt.	74	18	6.5	137	49.5	◓	○/◓	◓/◓	◒	31.5

*Based on limited data. **Powertrain has changed since last test. Models that scored too low in Overall Score are not recommended. !Caution, subpar crash-test results.

ConsumerReports

Customer Care

You can call us about your subscription at 800-666-5261.

Or write to us:
Consumer Reports Customer Care
P.O. Box 2109, Harlan, IA 51593-0298
Please include or copy address label from issue.
(Allow four to six weeks for processing.)

Visit us online:
ConsumerReports.org/magazine

Use our website to:
Renew or pay for your current subscription
Give a gift subscription • Change your address
Report a delivery problem • Cancel your subscription

Price In U.S., $5.99 per issue, special issues $6.99. In Canada, $6.99 CAN per issue, special issues $7.99 CAN (Goods and Services Tax included, GST #127047702). All other countries add $10 per year to the U.S. price for shipping and handling.

Back Issues Single copies of previous 24 issues, $7.95 each; previous two Buying Guides, $14.49 each (includes shipping and handling). Please send payment to Consumer Reports, Attn.: Customer Care, 101 Truman Ave., Yonkers, NY 10703-1057. Other ways to get Consumer Reports on the go: Google Play, iPad, Kindle, Next Issue, Nook, and Zinio.

Permissions Reproduction of Consumer Reports in whole or in part is forbidden without prior written permission (and is never permitted for advertising purposes). Address requests to CR Permissions Dept., 101 Truman Ave., Yonkers, NY 10703-1057.

Mailing Lists We exchange or rent our print customer postal mailing list so that it can be provided to other publications, companies, and nonprofit organizations that offer products or services through direct mail. If you wish to have your name deleted from our list, please send your address label with a request for deletion from outside use to Consumer Reports, P.O. Box 2109, Harlan, IA 51593-0298. We do not exchange or rent customers' email addresses. You can review our complete privacy policy regarding Consumer Reports information products, services, and programs at ConsumerReports.org/privacy. If you participate in our advocacy activities, please see our Consumers Union Advocacy Privacy Policy at ConsumersUnion.org/about/privacy.htm regarding how your information is used and shared with our affiliate, the Consumers Union Action Fund.

Consumer Reports (ISSN 0010-7174) is published monthly, except twice in December, by Consumers Union of U.S., Inc., 101 Truman Ave., Yonkers, NY 10703-1057. Periodicals postage paid at Yonkers, N.Y., and at other mailing offices; Canadian postage, at Mississauga, Ontario (Canadian publications registration number 2665247, agreement number 40015148). Title Consumer Reports is a federally registered trademark in the U.S. Patent Office. Contents of this issue copyright © 2016 by Consumers Union of U.S., Inc. All rights reserved under international and Pan-American copyright conventions.

CR's No Commercial Use Policy To view the policy, go to Consumer Reports.org/nocommercialuse.

Voting Paid subscribers may become voting members of CR by providing written acceptance of membership, by sending in a nomination for the board of directors, or by returning a ballot for the annual election of CR's directors.

Contributions are tax-deductible in accordance with the law as Consumer Reports is a 501(c)(3) nonprofit organization. Persons who contribute $10 to $99 become Friends Circle Members. Contributors of $100 to $999 become Leadership Circle Members, and those who contribute $1,000 or more become President's Circle Members. Donations of commonly traded securities or real estate will be accepted and immediately converted to cash. For information or to make a donation, please write to CR Foundation, 101 Truman Ave., Yonkers, NY 10703-1057 or email donorservices@cu.consumer.org.

Planned Giving Bequests (please remember CR in your will) and Charitable Gift Annuities can help support CR's programs. For information, write to Planned Giving, 101 Truman Ave., Yonkers, NY 10703-1057.

Consumer Reports' Staff operates under contract between Consumer Reports and The NewsGuild of New York Local 31003, CWA.

POSTMASTER Send address changes to Consumer Reports, P.O. Box 2109, Harlan, IA 51593-0298. If the post office alerts us that your magazines are undeliverable, we have no further obligation to fulfill your magazines unless we have a corrected address within two years.

CANADA POST If copies are undeliverable, return to Consumer Reports, P.O. Box 1051, STN MAIN, Fort Erie ON L2A 6C7.

Consumer Reports is a member of Consumers International, a federation of more than 220 consumer organizations from more than 115 countries working to protect and empower consumers throughout the world. For information, go to consumersinternational.org.

Please Remember CR in Your Will

For information on how to leave a bequest and become a Legacy Leader, please contact us at 877-275-3425 or bequests@cr.consumer.org.

In Great Company

COL. LANE CARLSON was one of the first decorated women in the U.S. Army. Originally from Nebraska, Lane soared to high ranks of military service. She served as an aide to Gen. Douglas MacArthur, a guide for Helen Keller, and a military technical adviser to Hollywood.

Lane also cared deeply about the work of Consumer Reports. She included a generous bequest to Consumer Reports in her estate.

Her accomplishments and legacy are admirable, and Consumer Reports is proud, in turn, to have earned her appreciation and support.

Please join the ranks of our Legacy Society.

☐ **Yes,** I have already included Consumer Reports in my will or other estate plans.

☐ **Yes,** I want to leave a legacy by including Consumer Reports in my will or other estate plans. Please send me more information about the Legacy Society.

Name(s) _____

Address _____

_____

Email _____

Telephone _____

0716AFR

Return to: Planned Giving, 101 Truman Ave., Yonkers, NY 10703
bequests@cr.consumer.org | 877-275-3425

INDEX

A

- Air conditioners ... Jul 16, 17
- Antibiotics ... Dec 15, 11
  - in meat ... Jan 16, 40; Jun 16, 8
- Audio equipment
  - as gifts ... Dec 15, 40

AUTOMOBILE RATINGS:

- Audi Q7 ... Jul 16, 62
- BMW 750i ... May 16, 66
- BMW X1 ... Jul 16, 63
- Chevrolet Colorado ... Aug 15, 57
- Chevrolet Trax ... Oct 15, 59
- Dodge Challenger ... Aug 15, 58
- Fiat 500X ... Jan 16, 59
- Ford Edge ... Nov 15, 62
- Ford F-150 ... Aug 15, 56
- Ford Mustang ... Aug 15, 58
- Honda Civic ... May 16, 67
- Honda HR-V ... Oct 15, 58
- Hyundai Tucson ... Jan 16, 57
- Jeep Renegade ... Oct 15, 59
- Kia Optima ... Jun 16, 62
- Land Rover Discovery Sport ... Nov 15, 62
- Lexus NX ... Sep 15, 58
- Lexus RX ... May 16, 65
- Lincoln MKX ... May 16, 64
- Mazda CX-3 ... Jan 16, 58
- Mercedes-Benz GLC300 ... Jul 16, 62
- Mitsubishi Outlander ... Feb 16, 59
- Nissan Maxima ... Dec 15, 71
- Scion iM ... Feb 16, 58
- scoring system ... Apr 16, 8
- Toyota Avalon ... Jun 16, 64
- Toyota RAV4 ... Jul 16, 63
- Toyota Tacoma ... Jun 16, 63
- Volvo V60 Cross Country ... Sep 15, 59
- Volvo XC90 ... Jan 16, 56

AUTOMOBILES & AUTO EQUIPMENT:

- Audi TT ... Mar 16, 56
- automatic braking ... Jun 16, 8
- batteries ... Jan 16, 53
- best & worst for 2015 ... Oct 15, 53
- brand report card ... Apr 16, 23
- Chevrolet Camaro 2016 redesign ... Aug 15, 59
- child safety seats ... Sep 15, 55; Feb 16, 55
- choosing a car ... Apr 16, 16
- coming in 2016 ... Apr 16, 20
- deals, summer ... Aug 15, 64
- driving, winter ... Nov 15, 52
- family vehicles ... Sep 15, 52
- as gifts ... Dec 15, 46
- infotainment systems ... Jul 16, 58
- insurance, rate setting ... Sep 15, 28
- Mazda CX-3 ... Oct 15, 57
- Mazda MX-5 Miata ... Mar 16, 57
- mechanics ... Mar 16, 53
- new for 2016 ... Oct 15, 50
- oil consumption ... Aug 15, 61
- owner satisfaction ... Jan 16, 49
- profiles, 2016 ... Apr 16, 32
- Ratings, 2015 ... Apr 16, 70
- reliability ... Dec 15, 62; Apr 16, 86
- safety
  - features ... Apr 16, 24
  - rear seat ... Sep 15, 9
- Scion iA ... Mar 16, 58
- self-driving cars ... May 16, 44
- Smart ForTwo ... Mar 16, 59
- SUVs
  - small ... Oct 15, 56
- Tesla Model S P85D ... Oct 15, 60
- tires ... Apr 16, 84
  - treadwear ... Nov 15, 57
- top picks for 2016 ... Apr 16, 10
- Toyota Prius ... Apr 16, 14
- used cars ... Apr 16, 79
  - shopping ... Jun 16, 57
- Volkswagen Jetta ... Feb 16, 59

B–D

- Banks & financial institutions
  - services ... Jan 16, 24
- Bathroom remodeling ... Sep 15, 38
- Batteries ... Dec 15, 36
- Beef
  - ground, safety ... Oct 15, 26
  - tenderized, safety labeling ... Aug 15, 8
- Cabinets, kitchen ... Aug 15, 34
- Cameras
  - digital ... Oct 14, 47; Nov 15, 9
- Caramel coloring, safety ... Sep 15, 8
- Cash
  - as a gift ... Dec 15, 57
- Charities ... Dec 15, 23
- Chicken
  - food safety ... Jun 16, 8
- Clothes dryers ... Nov 15, 16
- Cloud services ... Feb 16, 13
- Coffee
  - cold-brew ... Jun 16, 23
- Computers ... Jan 16, 21
  - convertible tablets ... May 16, 24
  - laptops
    - reliability ... Sep 15, 48; Jan 16, 18
- Consumer action
  - advertising, deceptive, YouTube ... Aug 15, 8
  - airline prices ... Oct 15, 9
  - cell phones
    - radiation ... Nov 15, 10
  - Consumer Financial Protection Bureau, Congressional weakening of ... Oct 15, 9
  - consumer rights ... Nov 15, 8
  - cost ... Nov 15, 12
  - credit reports ... Nov 15, 9
  - financial advisers ... Jul 16, 8
  - food arsenic levels ... Jul 16, 8
  - medical bills, protesting ... Aug 15, 8; Nov 15, 46
  - National Highway Traffic Safety Administration funding ... Sep 15, 9
  - reverse mortgages ... Sep 15, 9
- Consumer heroism
  - Medicare Fraud Strike Force ... Oct 15, 8
  - robocalls ... Aug 15, 8
- Consumer victories, telecommunications, Lifeline phone discounts ... Sep 15, 9
- Consumers Union Safe Patient Project ... Oct 15, 9
- Cooktops ... Aug 15, 40
- Coolers ... Jul 16, 15
- Countertops ... Dec 15, 11
  - bathroom ... Sep 15, 38
  - kitchen ... Aug 15, 32
- Credit cards
  - benefits of ... Aug 15, 13
  - rewards ... Dec 15, 26
- Crowdfunding
  - scams ... Jan 16, 10
- Customer service ... Sep 15, 10
- Dishwashers ... Aug 15, 46; Feb 16, 13
  - detergents ... May 16, 25
  - drying function ... Jun 16, 26
  - odors ... Mar 16, 15
- Doctors
  - disciplinary status ... May 16, 30
- Driveway patches ... Mar 16, 20
- Drugs
  - anti-aging ... Aug 15, 16
  - antibiotics, misuse ... Aug 15, 20
  - pain relievers ... Jun 16, 28
  - prescription ... Nov 15, 9
  - pricing ... Jan 16, 13
  - sleeping pills ... Feb 16, 22
- Dryers ... May 16, 56

E–G

- Electronics
  - as gifts ... Dec 15, 32
  - shopping for ... Dec 15, 37
- Energy costs ... Oct 15, 38
  - cutting ... Oct 15, 44
- Energy Star program ... Oct 15, 42
- Exercise equipment ... Feb 16, 14
- Facial recognition ... Feb 16, 40
- Financial planners ... Dec 15, 6
- Fireplaces
  - gas ... Feb 16, 9
- Fitness trackers ... Feb 16, 20; Jul 16, 9
- Flooring, kitchen ... Aug 15, 36
- Flower delivery ... May 16, 26
- Food
  - as gifts ... Dec 15, 28
    - food baskets ... Dec 15, 38
  - history of Consumer Reports advocacy ... May 16, 52
  - industry practices ... May 16, 50
  - irradiation ... Dec 15, 6
  - labeling
    - dates ... Dec 15, 14
    - GMO ... Mar 16, 8
    - "natural" ... Mar 16, 10
  - prepared ... Mar 16, 38
- 401(k) plans ... Oct 15, 13
- Generators ... Oct 15, 16
- Gift cards ... Dec 15, 44
- Gift etiquette ... Dec 15, 53
- Gift-wrapping services ... Dec 15, 24
- Grills ... Jul 16, 30

H–K

- Headphones ... Oct 15, 24; Jul 16, 44
- Healthcare
  - advances ... Jul 16, 52
  - history of Consumer Reports advocacy ... Jul 16, 54
- Herbicide, homemade ... Aug 15, 8
- Home appliances
  - as gifts ... Dec 15, 48; Dec 15, 54
- Home improvements ... Nov 15, 13
  - for increasing value ... Mar 16, 30
- Home ownership
  - financing ... Mar 16, 34
  - trends ... Mar 16, 26
- Home renovation ... Jun 16, 40
- Homeopathy ... Mar 16, 15
- Hospitals
  - infections at ... Sep 15, 22; Oct 15, 5
- Humidifiers ... Jan 16, 9
- In-home care ... Jan 16, 12
- Insect repellents ... Jul 16, 40
- Insurance ... Dec 15, 11
  - for pets ... May 16, 12
- Internet
  - service ... Aug 15, 48
- Irons ... Nov 15, 16
- Juice cleanses ... Mar 16, 19
- Kitchen appliances
  - as gifts ... Dec 15, 16
  - shopping for ... Aug 15, 39
- Kitchen remodeling ... Aug 15, 27
  - one-stop shopping ... Aug 15, 30

L–P

- Laundry detergents ... Sep 15, 18; May 16, 56
- Laundry machines ... May 16, 56
- Lawn care ... May 16, 18
- Lawn mowers ... May 16, 22
- Leaf blowers ... Nov 15, 13
- Lightbulbs ... Oct 15, 45
  - smart ... Jun 16, 9
- Loans
  - mortgages
    - reverse ... May 16, 14
- Longevity, savings and ... Aug 15, 10
- Lottery ... Dec 15, 44
- Luggage
  - carry-on ... Feb 16, 12
- Maple syrup ... Mar 16, 20
- Mattresses ... Feb 16, 34
- Medical alert systems ... May 16, 24
- Medical bills ... Mar 16, 8
- Medical marijuana ... Jun 16, 28
- Mortgages
  - reverse ... May 16, 14
- Outdoor equipment
  - as gifts ... Dec 15, 54
- Packaging ... Nov 15, 24
- Pain relief ... Jun 16, 28
- Paints & stains
  - labeling claims ... Sep 15, 8
- Pasta ... Dec 15, 13
- Pet insurance ... May 16, 12
- Photography, smartphone ... Jun 16, 10
- Pillows ... Feb 16, 34
- Portable devices
  - as gifts ... Dec 15, 40
- Pressure washers ... Mar 16, 22
- Printers ... Dec 15, 10

R–S

- Radiation ... Nov 15, 7
- Ranges ... Aug 15, 40
- Recycled wrapping paper ... Dec 15, 25
- Refrigerators ... Aug 15, 43
- Regifting ... Dec 15, 43
- Reverse mortgages ... May 16, 14
- Roadside assistance ... Dec 15, 69
- Robocalls ... Sep 15, 14; Mar 16, 8
- Routers ... Jan 16, 12
- Scales
  - smart ... Mar 16, 16
- Scams
  - home security ... Dec 15, 13
  - phishing by text message ... Oct 15, 12
  - senior-targeted ... Nov 15, 28
  - taxes ... Feb 16, 11
- Shaving supplies
  - subscription services ... May 16, 11
- Shrimp
  - antibiotics in ... Aug 15, 9
- Sinks & faucets
  - bathroom ... Sep 15, 38
  - kitchen ... Aug 15, 35
- Sleep aids ... Feb 16, 32
- Smartphones
  - devices & services ... Feb 16, 46
  - navigation apps ... Oct 15, 34
  - photo lens add-ons ... Jun 16, 10
  - photo storage ... Dec 15, 10
  - Samsung Galaxy S line ... Jun 16, 27
  - for seniors ... Sep 15, 13
- Snacks & snacking ... Sep 15, 44
- Snow blowers ... Jan 16, 34
- Snow shovels ... Jan 16, 38
- Soft drinks
  - reduced-calorie ... Jan 16, 10
- Solar power ... Oct 15, 40
- Space heaters ... Jan 16, 22
- Speakers
  - wireless ... Mar 16, 20; Jul 16, 44
- Stores
  - Bed Bath & Beyond, return policy ... Aug 15, 9
  - return policies ... Dec 15, 58
- Streaming media
  - services & players ... Jun 16, 15
  - streaming music services ... Jul 16, 44
- Student discounts ... Oct 15, 10
- Sunscreens ... Jan 16, 12; Jul 16, 20

T

- Taxes
  - scams ... Feb 16, 11
  - tips ... Feb 16, 11
- Tax-preparation software ... Mar 16, 21
- Telephones
  - smartphones
    - navigation apps ... Oct 15, 34
    - Samsung Galaxy S line ... Jun 16, 27
    - for seniors ... Sep 15, 13
- Television ... Aug 15, 48
  - Pay-TV ... Dec 15, 6
- Television sets
  - buying tips ... Nov 15, 38
  - Ultra HD ... Mar 16, 15
- Timeshares ... Mar 16, 48
- Toilet paper ... Oct 15, 20
- Toilets ... Sep 15, 38; Jun 16, 13
- Tools
  - as gifts ... Dec 15, 54
- Towels
  - sandproof ... Jul 16, 15
- Trans fats, new FDA regulations on ... Oct 15, 9
- Tree tools ... Oct 15, 18

U–W

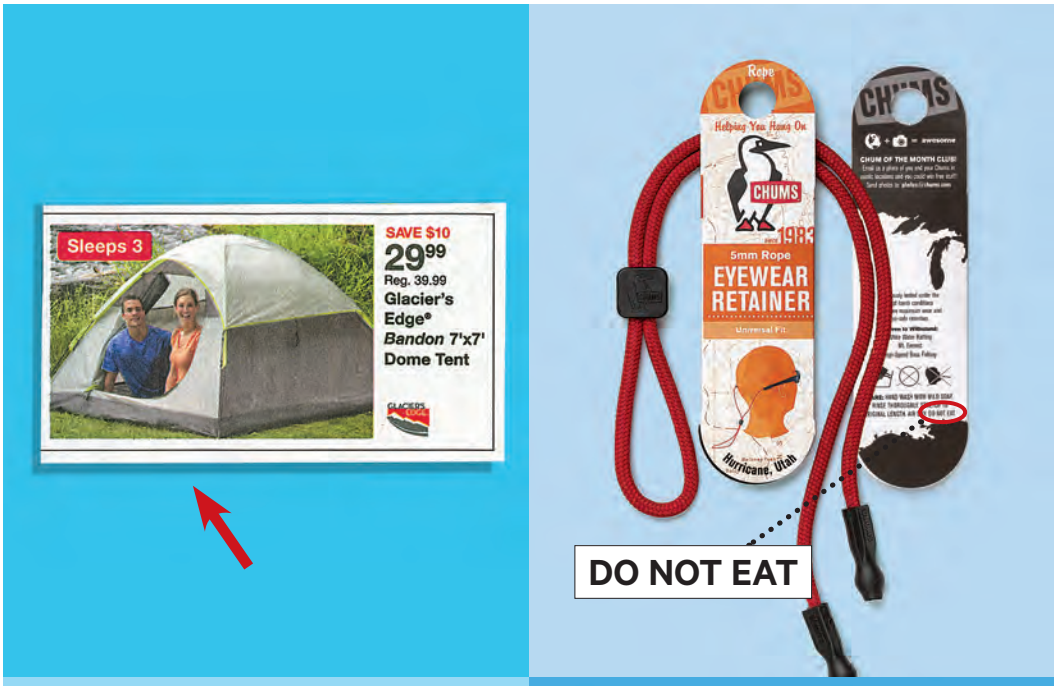
- Umbrellas
  - beach ... Jul 16, 15
- Vaccines ... Oct 15, 12
- Vacuum cleaners ... Nov 15, 22
  - performance on super-plush carpet ... Mar 16, 9
- Veggie burgers ... Jun 16, 20
- Video streaming ... Aug 15, 48
  - choosing ... Sep 15, 13
- Virtual reality ... Mar 16, 12
- Voting
  - online ... Jul 16, 10
- Waffle makers ... Mar 16, 20
- Washing machines ... Nov 15, 18; May 16, 56
- Watches, smart ... Aug 15, 18
- Wedding industry ... Jun 16, 48
- Windshield defrosting ... Feb 16, 13

Summer Daze

Maybe it's the heat, but these mixed messages left us more than a little confused

Upstairs, Downstairs Looks like it's standing room only in this apparently bottomless tent.

Submitted by Karl and Janice Smith, Freeland, Wash.

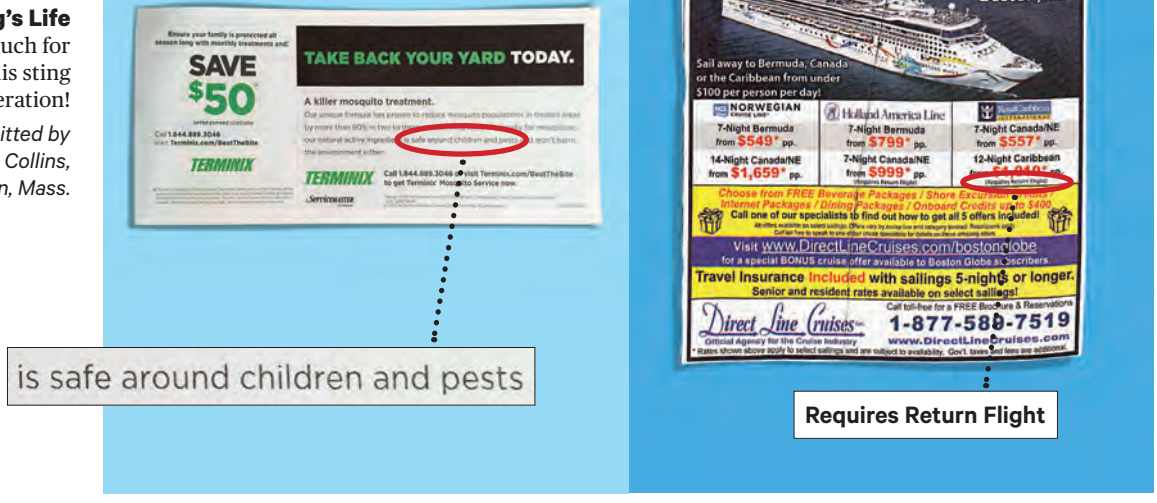


At the End of Our Rope Thanks for the reminder to pack a picnic.

Submitted by Mike and Donna Jones, Los Osos, Calif.

A Bug's Life So much for this sting operation!

Submitted by Chrissie Collins, Arlington, Mass.


SAVE $50
TAKE BACK YOUR YARD TODAY.
A killer mosquito treatment.
TERMINIX
is safe around children and pests
Hate to Fly?
Boston, MA
Sail away to Bermuda, Canada or the Caribbean from under $100 per person per day!
NORWEGIAN
7-Night Bermuda from $549* pp.
14-Night Canada/NE from $1,659* pp.
Holland America Line
7-Night Bermuda from $799* pp.
7-Night Canada/NE from $999* pp.
7-Night Canada/NE from $557* pp.
12-Night Caribbean
Call one of our specialists to find out how to get all 5 offers included!
Visit www.DirectLineCruises.com/bostonglobe
for a special BONUS cruise offer available to Boston Globe subscribers.
Travel Insurance Included with sailings 5-nights or longer.
Senior and resident rates available on select sailings!
Direct Line Cruises
1-877-580-7519
www.DirectLineCruises.com
Requires Return Flight

Cruising Altitude Good luck getting home!

Submitted by Richard Cashman, Beverly, Mass.

SHARE Be on the lookout for goofs and glitches like these. Share them with us—by email at SellingIt@cro.consumer.org; by mail to Selling It, Consumer Reports, 101 Truman Ave., Yonkers, NY 10703; or by social media using the hashtag #CRSellingIt—and we might publish yours. Please include key information, such as the publication's name and date.

ConsumerReports® **Build & Buy** Car Buying Service

Car Buying Should Be Hassle-Free

Get in and out of the dealership in half the time

- Consumer Reports Ratings
- Negotiation-free savings
- Nationwide dealer network
- Incentives included

Maximize your savings at ConsumerReports.org/carbuying

*Between 7/1/15 and 9/30/15, the average estimated savings off MSRP presented by TrueCar Certified Dealers to users of the Build & Buy Car Buying Service, based on users who configured virtual vehicles and who TrueCar identified as purchasing a new vehicle of the same make and model listed on the certificate from Certified Dealers as of 10/31/2015, was $2,954, including applicable vehicle specific manufacturer incentives. Your actual savings may vary based on multiple factors including the vehicle you select, region, dealer, and applicable vehicle specific manufacturer incentives which are subject to change. The Manufacturer's Suggested Retail Price ("MSRP") is determined by the manufacturer, and may not reflect the price at which vehicles are generally sold in the dealer's trade area as not all vehicles are sold at MSRP. Each dealer sets its own pricing. Your actual purchase price is negotiated between you and the dealer. Neither TrueCar nor Consumer Reports brokers, sells or leases motor vehicles. Service not available in Canada.

IN THIS SPECIAL SECTION

34a Air Conditioners

34b Gas Grills

34c Recalls

34d Autos

34d Contact Info

✔ **CR Best Buy** Products with this icon offer the best combination of performance and price. All are recommended.

✔ **Recommended** Models with this designation perform well and stand out for reasons we note.

How to Use the Canada Extra Section

Every month, Canada Extra provides Canadian pricing and availability information about products tested for that issue. The Ratings in this section are based on this month's reports, but they narrow your choices to the products that are sold in Canada.

You can use this section in either of two ways: Start with the main report, read about the products that interest you, and turn to this section to find whether they're sold–and for what price–in Canada. Or start here, find products sold in Canada whose price and overall score appear promising, and read more about them in the main report and full Ratings chart; page numbers appear with each Canadian report. (For some products, the Canadian model designation differs slightly from the one used in the U.S.)

In most cases, the prices we list here are the approximate retail in Canadian dollars; manufacturers' list prices are indicated by an asterisk (*). Check marks identify CR Best Buys or recommended products in the U.S. Ratings. "NA" in a chart means that information wasn't available from the manufacturer. We include, in the Contact Info list on page 34d, the manufacturer's phone number and Web address in Canada so that you can call or go online to get information on a model you can't find in the stores. (Many products that aren't available in Canadian stores can be bought online.)

We appreciate your support, but we don't take it for granted. Please write to CanadaExtra@cu.consumer.org and tell us what you think. We can't reply to every email message or implement every suggestion, but with your help we'll try to keep growing to serve your needs.

Air Conditioners

Fifteen of the top-scoring air conditioners are available. **Report and Ratings, pages 17-19**

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
A. WINDOW A/Cs 5,000 TO 6,500 BTU/HR. (COOLS 100 TO 300 SQ. FT)				
✔	2	**LG** LW6016R [1]	$180	**74**
✔	3	**Frigidaire** FFRA0511R1	$170	**71**
	4	**Frigidaire** FFRE0533S1	$200	**70**
	5	**Friedrich** CP05G10A	$360	**70**
	8	**Haier** HWF05XCL	$160	**65**
B. WINDOW A/Cs 7,000 TO 8,500 BTU/HR. (COOLS 250 TO 400 SQ. FT.)				
✔	2	**LG** LW8014ER	$240	**77**
	5	**Haier** ESAQ408P	$420	**68**
	6	**LG** LW8016ER [1]	$240	**67**
	7	**Frigidaire** FFRE0833S1	$300	**67**

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
C. WINDOW A/Cs 9,800 TO 12,500 BTU/HR. (COOLS 350 TO 650 SQ. FT.)				
✔	1	**LG** LW1216ER [1] [2]	$350	**82**
✔	2	**LG** LW1214ER [2]	$350	**78**
	4	**Frigidaire** FFRE1033S1	$370	**64**
D. PORTABLE AIR CONDITIONERS 9,000 TO 15,500 BTU/HR.				
	1	**Friedrich** P12B	$785	**55**
	4	**Whynter** ARC-14SH	$750	**52**
	5	**Whynter** ARC-12SDH	$672	**51**

[1] Preretail model; we'll check-test retail model when it's available. [2] Has a slide-out chassis, which eases installation.

Gas Grills

Twenty-five of the top-scoring gas grills are available. **Report and Ratings, pages 30-39**

A. MIDSIZED (ROOM FOR 18 TO 28 BURGERS)

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
✔	1	**Nexgrill** 720-0830H (Home Depot)	$300	**77**
✔	2	**Backyard Grill** GBC1646P (Walmart)	$195	**76**
✔	4	**Weber** Spirit SP-320 46700401	NA	**74**
	11	**Napoleon** LD485RSBI	$1,150	**71**
	12	**Weber** E-330	$800	**70**
	14	**Weber** Genesis S-330	$1,250	**70**
	18	**Nexgrill** Evolution Infrared Plus 720-0882A (Home Depot)	NA	**69**
	19	**Napoleon** Lex 485RSIB	$1,100	**68**
	20	**Dyna-Glo** Premium DGA550SSP-D	$630	**68**
	22	**Weber** Genesis E-330	$1,250	**67**

B. LARGE (ROOM FOR 28 OR MORE BURGERS)

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
✔	2	**Napoleon** Prestige Pro 665RSIB	$3,300	**72**
	6	**Napoleon** Mirage Lex 730RSBI	$1,900	**68**
	7	**Weber** Summit E-670	$3,200	**68**
	8	**KitchenAid** 720-0893	$1,100	**67**

B. LARGE continued

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
	9	**KitchenAid** 720-0856	$1,500	**65**
	10	**Broil King** Baron 590S 923584 [3]	$950	**65**

C. SMALL (ROOM FOR 18 OR FEWER BURGERS)

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
✔	2	**Weber** E-210	$600	**71**
✔	3	**Broil-Mate** 165154	$200	**71**
	4	**Napoleon** SE325	$600	**68**
	5	**Broil-Mate** 24025BMT	$120	**66**
	6	**Char-Broil** Commercial Tru-Infrared 463642316 (Lowe's)	$350	**65**
	7	**Backyard Grill** GBC1429W-C (Walmart)	$165	**64**

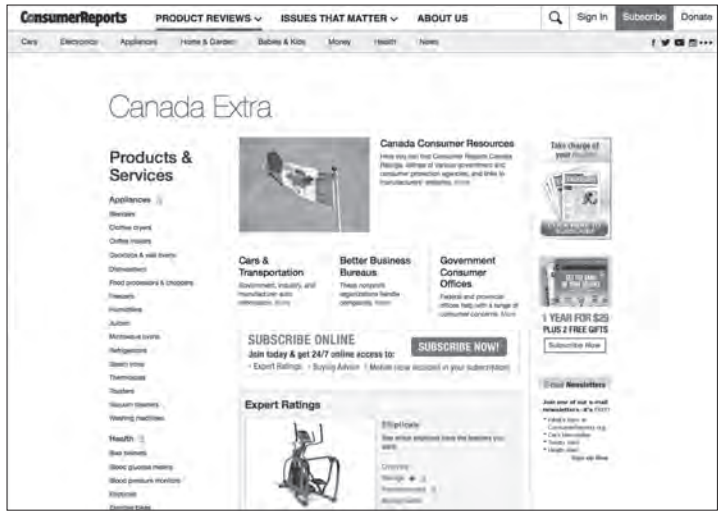
D. PORTABLE

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
	2	**Weber** Q 2200 54060001	$350	**60**
	4	**Weber** Q 1000 50060001	$220	**48**
	5	**Char-Broil** Tru-Infrared Grill2Go X200	$200	**45**

[3] Similar to the tested Broil King Baron 590 963584, now discontinued.

Canada Extra on the Web

Canada Extra information can be found on ConsumerReports.org, our website, along with the current issue of the magazine and more. Once there, click on the "Canada Extra" link on the opening screen. There you can see which reports have Canadian information available.



Recalls

2002-2010 Lexus and Toyota models
On certain vehicles, the passenger (frontal) airbag inflator could produce excessive internal pressure during airbag deployment, causing the inflator to rupture and propel fragments toward vehicle occupants. That could also damage the airbag module, preventing proper deployment. Note: This recall supersedes recalls 2013113, 2014224, 2015197, and 2015269.
Models 400,124 2002-2010 Lexus SC 430 vehicles and 2003-2008 Toyota Corolla, 2003-2008 Matrix, 2002-2007 Sequoia, and 2003-2006 Tundra vehicles.
What to Do All vehicles that have not received a replacement inflator as part of the previous recall will now have a replacement inflator installed by dealers. For Matrix model vehicles, dealers may replace the front passenger airbag assembly with one equipped with a newly specified inflator.

2003-2008 Pontiac Vibe models
On certain vehicles, the passenger (frontal) airbag inflator could produce excessive internal pressure during airbag deployment, causing the inflator to rupture and propel fragments toward vehicle occupants. That could also damage the airbag module, preventing proper deployment. Note: This recall supersedes recalls 2013-116, 2014-301, and 2015-272.
Models 60,672 vehicles.
What to Do Have the dealer replace the front passenger airbag assembly with one equipped with a newly specified inflator.

2011-2013 Kia Sorento models
On certain vehicles, the sunroof can break due to external impacts, which can allow sunroof crosspieces with some tempered glass attached to dislodge and drop into the passenger cabin and onto occupants.
Models 10,459 vehicles.
What to Do Have the dealer install additional connective pieces to prevent the possibility of sunroof crosspieces dropping under a product enhancement campaign. In the interim, owners are advised to drive with the sunshade in the closed position until the campaign is completed.

2011-2016 Porsche models
On certain vehicles, a circlip at the brake pedal hinge may not have been installed at the time of assembly, allowing the pedal to wobble and potentially separate from its pivot. That could lead to impaired brake function and increased stopping distances.
Models 10,370 2011-2016 Cayenne, Cayenne GTS, Cayenne Plug-In Hybrid, Cayenne S, and Cayenne Turbo S vehicles.
What to Do Have the dealer inspect and add a circlip as necessary.

2011-2016 Volkswagen Touareg models
On certain vehicles, a securing clip at the brake pedal hinge may have become dislodged during vehicle assembly, allowing the pedal to wobble and potentially separate from its pivot. That could lead to impaired brake function and increased stopping distances.
Models 11,588 vehicles.
What to Do Have the dealer inspect and add a securing clip as necessary.

2012-2013 Hyundai models
On certain vehicles, the cover seal of the windshield wiper motor could degrade over time and result in moisture ingress causing corrosion on the wiper motor's circuit board. In time, the windshield wipers could function intermittently or become inoperative.
Models 1,223 2012-2013 Equus and 2012 Genesis vehicles.
What to Do Have the dealer replace the windshield wiper motor with a revised wiper motor.

2012-2014 Volkswagen Passat models
Certain vehicles may have been equipped with an underbody sensor whose seal was improperly assembled, allowing water to penetrate and corrode the electrical terminals, resulting in an electrical short. The Malfunction Indicator Light (MIL) might illuminate in the vehicle and cause the circuit to overheat, increasing the risk of fire.
Models 11,693 vehicles.
What to Do Have the dealer inspect and, if necessary, replace the affected connector.

2015-2016 Ford and Lincoln models
On certain vehicles equipped with a 2.3-liter GTDI engine and an engine block heater, the block heater could be susceptible to overheating due to the engine's orientation, resulting in engine coolant leakage or heat damage to the electrical connector of the block heater and an increased risk of an underhood fire.
Models 3,993 2016 Ford Explorer and 2015-2016 Lincoln MKC vehicles.
What to Do Have the dealer replace the engine block heater element with one of a different design and inspect the block heater's electrical cord, and replace it if required. In the interim, owners are advised to stop using their block heater until the campaign is completed. Note: The risk exists only when the block heater is plugged in and the vehicle is parked.

2016-2017 Hyundai Santa Fe Sport models
On certain vehicles, the wiring to the switch within the driver seat belt buckle, which monitors whether the seat belt is buckled or unbuckled, could become damaged by the seat's height adjuster mechanism. That could result in no audible signal (chime) or indicator light if the buckle is not fastened, or the chime and indicator light could stay on when the seat belt is buckled.
Models 9,552 vehicles.
What to Do Have the dealer inspect and, if necessary, reroute the harness to its proper location. Any harness with damage to the circuitry will be replaced.

Autos

All of the tested vehicles are available in Canada. Listed within category. **Report and Ratings, pages 62-64**

MAKE & MODEL	PRICE RANGE	ACCELERATION (SEC.)				FUEL ECONOMY (LITERS PER 100 KM)		
		0-50 KM/H	0-100 KM/H	80-100 KM/H	500 METERS	CITY DRIVING	HIGHWAY DRIVING	OVERALL
COMPACT SUVs								
Toyota RAV4 Hybrid	$34,715–$38,515	3.4	9.2	3.8	19.2	9.0	6.6	7.5
Toyota RAV4 (4-cyl.)	$25,240–$37,750	3.5	9.8	4.2	19.7	14.2	7.5	10.0
LUXURY ENTRY-LEVEL SUV								
BMW X1	$38,800–$46,350	3.7	8.4	3.5	18.5	13.5	6.4	9.0
LUXURY COMPACT SUV								
Mercedes-Benz GLC	$44,950–$52,750	2.8	7.2	3.6	17.6	15.6	7.6	10.6
LUXURY 3-ROW SUV								
Audi Q7	$65,200–$73,500	2.6	7.1	3.5	17.3	17.8	8.3	11.9

Contact Info

How to reach manufacturers in Canada.

Backyard Grill
Contact local Walmart

Broil King
800-245-5138
omcbbq.com

Broil-Mate
800-245-5138
omcbbq.com

Char-Broil
905-529-1059
charbroil.ca

Dyna-Glo
847-324-5900
ghpgroupinc.com

Friedrich
210-546-0500
friedrich.com

Frigidaire
905-813-7700
frigidaire.ca

Haier
973-617-1800
haieramerica.com

KitchenAid
800-807-6777
kitchenaid.ca

LG
888-542-2623
lg.com/ca_en

Napoleon
napoleongrills.com

Nexgrill
800-913-8999
nexgrill.com

Weber
800-265-2150
weber.com

Whynter
866-949-6837
whynter.com